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JAMES M. NORTHINGTON, M.D., Editor

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The Diagnosis and Treatment of Hypochromic Anemias*

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IT IS CONVENIENT to divide all anemias into three large groups: first, those that are caused by dysfunction of the bone marrow; secondly, those caused by loss of blood, either intravascular or extravascular; and thirdly, those caused by iron deficiency. The anemias of the first group, or those of bone marrow dysfunction, include such diseases as pernicious anemia and other macrocytic anemias of various types as well as those conditions in which the function of the marrow is impaired by various toxic agents. The anemias caused by blood loss are those in which there may be either internal or external hemorrhage, but more important, those that result from intravascular destruction of red blood cells, usually by the process of hemolysis. This group includes such entities as acute hemolytic anemia of Lederer, chronic familial hemolytic jaundice, anemia of infectious diseases, etc. This paper is concerned mainly with the third group of anemias, that is, those of iron deficiency, but usually referred to as hypochromic anemias.

Hypochromic anemia is a true iron deficiency anemia and is caused by a deficiency of hemoglobin. It is the most common form of anemia encountered in the practice of medicine. Various estimates have indicated that from 90-95% of all of the anemic states encountered by the physician are of the so-called hypochromic, iron deficiency, or secondary type. The use of the word "secondary" for this particular anemic state has been brought about mainly because the condition usually develops from some other underlying fundamental defect. It should be emphasized, however, that the term hypochromic is far more satisfactory and descriptive than the term "secondary." Hypochromic anemia is a hematological term that is applied to the same condition and it is preferable because it describes accurately the condition of the red blood cells. It is based upon the morphologic appearance of the red blood cell as seen in blood smears when stained with Wright's stain and refers to a dimly stained red cell which has a distinct central pallor or even a complete loss of staining in the center because of the extremely low hemoglobin content. It indicates a situation therefore, in which the loss of hemoglobin has exceeded the loss of red cells; indeed, for that matter, it is possible to have severe hypochromic anemia with no depletion in the total number of red cells whatever. Thus, if there is an erythrocyte count of five million cells per cu. mm. and a hemoglobin of only 60%, it is obvious that the average red cell is carrying only .6 or 3/5 of its normal quota of hemoglobin. This is usually expressed as the color index.

Erythrocytes have their origin from the endothelium of the bone marrow, and in the normal individual they are formed to the extent of about 10 million cells per second. During this same time there is a compensatory destruction of an equal number of cells in the reticuloendothelium. This constant production and constant destruction of the same number results of course in the vascular

*Read before the Piedmont Post Graduate Assembly, Anderson, S. C., September, 1941

system maintaining its normal number of 4½ to 5 million cells per cu. mm.

Red cells are formed in practically all of the flat bones of the body where the marrow is quite red and hyperplastic. To a lesser extent they are formed in the ends of the long bones. In the formation of red cells there are two major factors necessary for their production. First of these is the so-called hematopoietic factor which is found in liver extract and which is necessary for the normal physiological maturation of the red cells from the youngest immature forms to the macroblastic stages. After the red cell reaches the macroblast stage, the second factor necessary for its continued development is the presence of iron in sufficient amounts for the thorough and complete hemoglobinization that begins at that stage, so that when the adult cell is thrown off into the peripheral circulation, it is fully filled with hemoglobin. If an adequate amount of iron is not present, the erythrocyte reaches maturity, is thrown into the blood stream with a low hemoglobin content, and therefore is incapable of properly exercising its function of transportation of oxygen and carbon dioxide. If a sufficient number of red cells are impaired to this extent, there results the clinical state that is known as anemia, characterized by varying degrees of pallor, weakness, fatigue, palpitation, and in extreme cases, dyspnea and tachycardia.

The Causes of Hypochromic Anemia

1. *A diet that is deficient in iron.* Hypochromic anemia may result from an inadequate amount of iron in the diet. This situation may develop in instances of malnutrition from lack of food or in people who fail to eat the proper types of food. It is relatively common in persons who are dieting for the purpose of losing weight.

2. *Impaired absorption of iron.* This may be secondary to a chronic diarrhea in which there is interference with absorption as a result of a considerable number of intestinal diseases, or even as a result of hypermotility of the intestinal tract. It should be pointed out that absence of free hydrochloric acid in the stomach interferes with absorption of iron, presumably because of failure of conversion to the ferrous state.

3. *Blood loss in large quantities.* This may be seen in traumatic cases, of course, or when the blood loss is slow, as in bleeding peptic ulcers, hemorrhoids, and uterine bleeding. The iron stores of the body are rapidly depleted since the blood normally contains about five times the concentration of iron as any other body tissue.

4. *Excessive physiological demand.* In the normal growth of the young, there is always a need for an increased hemoglobin to meet the requirements of the growing body and the increasing blood volume. This is particularly true during the first and second years of life, also at puberty, and during pregnancy. It is a well-known clinical fact that the hypochromic anemias may be seen most commonly at these times. In pregnancy, the nausea and vomiting may further accentuate this lack of available iron, not only because of food loss but because of loss of hydrochloric acid from the stomach.

5. *Acute and chronic infections.* It is believed that the presence of bacterial toxins has an inhibitory effect on the erythropoietic tissue of the bone marrow. Not only do bacterial toxins seem to quantitatively decrease the number of red cells formed in the marrow, but they also seem to interfere with the proper metabolism of iron, so that those red cells that are released are iron deficient and hypochromic when seen in the stained smear.

6. *Absence of secondary factor.* This term, secondary factor, refers to the possible existence of another factor that may be necessary for the proper metabolism of iron. Examples of this are seen in which the iron intake may be adequate, but there may be a deficiency of some hormone or vitamin that appears necessary for its metabolism. Thus, hypochromic anemias may be seen in vitamin C deficiencies or deficiency of the B complex. They may also be seen in hypothyroidism. Therefore the administration of vitamin C or B complex or thyroid may provide in some cases the secondary factor necessary for the proper elaboration of the iron and hemoglobin molecule.

7. *Parasitic infections.* The most common of parasitic infections are those of the intestinal tract. There has been some controversy as to how parasitism causes hypochromic anemia. Some workers have maintained that it is brought about by the actual loss of blood by the parasites sucking blood from the intestinal mucosa. Others have maintained that the parasites elaborate a toxin which interferes with the proper absorption of iron containing foods in the intestinal tract, and thirdly, others maintain that the toxins given off by the parasitic worms interfere with the proper elaboration of the hemoglobin molecule even though the absorption of iron is sufficient. It is a well recognized clinical fact that a moderate to heavy parasitic infestation nearly always gives rise to hypochromic anemia.

8. *Malignancy.* Nearly every case of malignancy is accompanied by some degere of anemia, even though the malignant process is not extensive grossly and there is not marked involvement of a large amount of tissue. Anemias seem to be more likely to develop with gastro-intestinal malignancies than with any other type. However, a very small breast cancer can give rise to a rather serious

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degree of hypochromic anemia. Malignancies of the stomach produce not only hypochromic anemias, but because of interference with the production of the hematopoietic factor there may be an associated severe macrocytosis resulting in a blood picture indistinguishable from pernicious anemia.

It should be pointed out that the above factors are the most important ones in the production of hypochromic anemias though there are probably others that also produce the same end result. Of the above causes, it should be emphasized that probably the most important ones are those resulting from an inadequate amount of iron in the diet.

The Diagnosis of Hypochromic Anemias

The diagnosis of hypochromic anemia is usually relatively simple. In the more advanced and severe cases, it can be established by simple inspection of the patient. The typical pallor, with pale gums, and pallor of the conjunctiva are usually sufficient criteria for diagnosis of an anemic state. If it is established that the patient is anemic, the diagnosis of the exact type of anemia can be determined only by laboratory methods. Among these the following are particularly important:

1. *Hemoglobin determination.* The hemoglobin percentage is the most accurate and reliable criterion of the degree of any anemia, because it indicates the amount of functional hemoglobin present in the vascular system regardless of the number of red cells that may be present. We have found that the most accurate determination of hemoglobin in the average or small laboratory can be made by the Sahli method. This is a relatively accurate method and also one that is quite inexpensive. In the larger laboratories where the amount of work justifies the purchase of such an instrument, the photoelectric instruments are no doubt more accurate. The use of the Tallquist hemoglobin scale is to be condemned because the factor of error is sometimes as high as 20-30%.

2. *The erythrocyte count.* As already indicated, the number of red cells is less important as an index to hypochromic anemia than is the hemoglobin. There may be patients with normal red cell counts but in whom the hemoglobin is only one half normal. Furthermore the red cells may be as low as 2 to 2½ million, with a hemoglobin percentage of 40-50%. In each instance, however, it is the quantity of hemoglobin that indicates the degree of anemia. It is the hemoglobin that reflects the true index of oxygen and carbon dioxide carrying capacity.

3. *Appearance of the red cells* on the stained smear. In hypochromic anemia, the cells are dimly stained, particularly in their central portion, and present varying degrees of achromia. In severe cases, some of them may appear merely as rings, with no hemoglobin at all in the center. In the usual case of hypochromic anemia, there is little disturbance in the size and shape of the red cell, in contrast to the picture that is seen in macrocytic anemia.

4. *The color index* is always a reliable indicator as to the presence of hypochromic anemia. This represents the amount of hemoglobin expressed in per cent of the normal divided by the number of red cells expressed in per cent of the normal. If the color index is below one, it is probably the single most reliable indicator of hypochromia that we have in our laboratory studies.

The Treatment of Hypochromic Anemia

In considering the treatment of hypochromic anemia it is first desirable that the mechanism and function of iron be considered. The entire human body contains only 4.3 grams of iron, and of this over 50% circulates in the vascular system bound with hemoglobin. There is only .3 gms. in the tissue and about 1.3 gms. in storage, presumably for reserve purposes. Under normal conditions there is a sufficient amount of iron taken daily in food which is then absorbed and presumably carried to the liver with the major storage taking place in that organ. The iron in food, however, is usually present in the insoluble ferric form. After reaching the stomach it is acted upon by the pepsin and the HCl. It then passes into the duodenum where it is again subjected to the action of intestinal ferments and there converted into a ferrous state which is freely soluble. This is then absorbed by the blood and lymphatic stream and transported to the liver and bone marrow for immediate storage or use. It is obvious then that an iron deficiency may develop because of an inadequate amount in the diet or because of impairment of gastric function with a decrease in the amount of HCl and therefore failure to convert the ferric to the soluble ferrous salt. Also, diseases of the upper intestinal tract may interfere with the absorption of the metal. Furthermore, if the liver plays a role in the further elaboration of the iron, liver diseases conceivably could interfere with its proper metabolism.

If proper treatment is employed for hypochromic anemia, there is no greater therapeutic success than that from iron therapy. It is important of course that all anemias should be thoroughly studied and properly classified in order that it be well established that hypochromia does actually exist. It is obvious that iron treatment will be of no service in blood that already contains an adequate amount, and conversely, liver extract is of no service in hypochromic anemias if the number of red cells is at the normal level. Yet it is not

uncommon to see many patients in whom the type of anemia has not been adequately determined, who have been given needless and expensive liver preparations, when their anemia could have been corrected by relatively inexpensive iron therapy.

When the diagnosis of hypochromic anemia is established, every effort should be made to determine its cause and to remedy the underlying cause as well as to correct the anemia. A hypochromic anemia may be corrected and temporary alleviation of symptoms result, but if the underlying cause still exists, there will be a recurrence of the anemia in the future.

Careful choice of the iron preparation is important in the treatment of hypochromic anemia. In the table below is shown various simple iron preparations with the usual daily dose expressed in grams and the percentage of the preparation utilized. It will be noted that utilization of the ferrous salt is far greater than that of the ferric type. Furthermore, if the ferric form is used, it requires transformation into the ferrous type before it is available for absorption by the intestinal mucosa. Much smaller daily doses of the ferrous forms will achieve the same therapeutic result as larger doses of the ferric type.

TABLE I

Reproduced from *Diseases of the Blood & Atlas of Hematology* by Roy R. Kracke, M.D. Second edition.

Preparation	*Daily Dose in Grams*	*Utilization*
Reduced iron	2-6	1%
Ferrous chloride	.35	15
Ferrous sulfate	.6	14
Ferrous lactate	1.5	8
Ferrous carbonate	4.0	7
Ferrous citrate	2.0	6
Soluble ferric oxide	35.0	3
Ferric ammonium citrate	6.0	2
Ferric sodium citrate	4.0	3

In many instances of a hypochromic anemia, five grains of a ferrous salt twice daily after meals is entirely adequate. If not, the dose can be doubled with perfect safety. The usual dose of ferrous sulfate is only 15 grains daily whereas to achieve the same results, the dose of ferric ammonium citrate would have to be from 60-120 grains. Iron should be given three times daily and always given with or just after the meals. In this way it is mixed with a considerable amount of food and irritation to the gastric mucosa is thus avoided. Iron is an irritant to the gastric and intestinal mucosa and smaller doses are always indicated if possible. There is no necessity for the use of injectable preparations of iron since injectable iron does not produce any more satisfactory response than the oral administration of the metal.

There is no indication for the mixing of iron and liver preparations, yet this is a type of therapy that seems to be quite popular among physicians in general. This has come about mainly because physicians are almost daily badgered by the various manufacturing companies to use this or that iron containing mixture. These compounds range from those containing simple mixtures of iron and liver extract to many others containing variable other mineral salts and vitamins of all types. There is no excuse for the use of these mixtures in the treatment of hypochromic anemia. The patient with hypochromic anemia does not need liver extract, and if a vitamin deficiency exists, as it sometimes does, the specific vitamin deficiency should be treated as such. Altogether, this type of mixed shotgun therapy is entirely unwarranted and it is extremely expensive for the patient. Table 2, shown below, presents a considerable number of various preparations designed for restoration of blood values. The trade name is given, with the name of the manufacturer, the essential iron compound that is obtained, with its daily dose and available iron and finally the price. A careful study of this chart will show that of all preparations available, ferrous sulfate is probably one of the best and least expensive.

The use of copper with iron treatment has long been a debatable question. Most authorities agree that it is unnecessary in the treatment of the average case of hypochromic anemia. It is probably true that there is occasionally a refractory instance in which the use of copper may appear indicated. If so, this can be added to the iron medication and preparations are available on the market that combine the two metals. Of these, the preparation of Frosst and Company is a mixture of ferrous carbonate and copper carbonate and seems to be one of the better preparations. In refractory cases of hypochromic anemia and in those instances in which there is unusual gastric irritation, the daily doses of iron can be subdivided into very small amounts, and one capsule of one to two grains can be given every two hours during the course of the day. In this way the intestinal mucosa is more or less constantly bathed with the metal and probably absorption is facilitated.

Any case of hypochromic anemia associated with achlorhydria should have much larger doses of iron for correction of the anemia. This is notably true in that syndrome known as microcytic achlorhydric hypochromic anemia, usually seen in women. Such patients may require from 30 to as much as 60 grains of ferrous sulfate daily for correction of the anemia and after that a maintenance dose of five to fifteen grains daily. Furthermore, in the achlorhydric cases, the use of dilute hydrochloric acid in water appears advisable.

If the degree of the anemia is severe, particularly after extensive blood loss, patients will re-

TABLE 2—VARIOUS TYPES OF WIDELY USED IRON PREPARATIONS

Reproduced from *Diseases of the Blood & Atlas of Hematology* by Roy R. Kracke, M.D. Second edition.

Trademark	*Manufacturer*	*Iron Compound*	*Daily Dose*	*Available Iron per Diem*	*Available Liver per Diem*	*Available Copper per Diem*	*Retail Price*
Bepron	John Wyeth Bro.	Ferrous-ferric saccharate	3 tbsp.	405	92.8	....	$3.75 per pint
Cofron Elixir	Abbott Labs.	Ferric ammonium citrate	3 tbsp.	99	60.0	0.4	2.00 per 12 flu. oz.
Cupriferrum	E. R. Squibb and Son	Ferric ammonium citrate	9 caps	765	.....	4.5	1.25 per 100
Feosol	Smith, Kline and French Labs.	Ferrous sulfate	4 tabs.	160	.....	....	1.00 per 100
Ferric Ammonium Citrate	Lederle Labs.	Ferric ammonium citrate	9 caps.	765	.....	....	1.25 per 100
Ferro-Catalytic	Chas. E. Frosst Co.	Ferrous carbonate	3 caps	550	.....	4.0	1.75 per 50
Gluco-Ferrum* (elixir)	Van Pelt and Brown	Ferrous gluconate	2 tbsp.	36	.....	....	1.00 per 8 oz.
Hebulon*	E. R. Squibb and Son	Ferrous sulfate	6 caps.	240	96.0	....	3.25 per 100
Hematinic Plastules (plain)	Bovinine Co.	Ferrous sulfate	3 plas.	200	.....	....	.75 per 50
Hematinic Plastules (with liver)	Bovinine Co.	Ferrous sulfate	6 plas.	200	21.0	....	1.50 per 50
Iron and Ammonium Citrate (green)	Sharp and Dohme	Ferric ammonium citrate	2 caps.	170	.....	....	.75 per 100
Iron Cacodylate (ampoules)	Parke, Davis Co.	Ferric cacodylate	1 c.c. (inj.)	1.5	.....	....	1.75 per 30 c.c.
Iron and Copper	Eli Lilly Co.	Ferric pyrophosphate	5 tabs.	61	.....	4.0	1.00 per 100
Ironyl	E. R. Squibb and Son	Ferrous adenylate	1 c.c.	8	.....	....	6.50 per 10 c.c.
Jeculin*	Upjohn	Ferric ammonium citrate	9 caps.	102	92.8	....	2.49 per 84
Lextron No. 55	Eli Lilly Co.	Ferric ammonium citrate	12 caps.	408	5.5 (Liver and Stomach conc.)	....	2.75 per 84
Lirimin*	Sharp and Dohme	Ferrous sulfate	2 caps.	120	.48	....	6.00 per 100
Naferon	Parke, Davis Co.	Ferric sodium citrate	6 caps.	375	.....	....	1.65 per 100

*Denotes presence of vitamins.

Note: Ferrous sulfate is one of the best and inexpensive.
The Frosst preparation contains copper.
There is no indication for iron injections.
There is no indication for use of iron and liver mixtures.

cover more rapidly if given a transfusion along with iron therapy. Plasma transfusions are not indicated under any conditions in the treatment of this or any other anemic state. In instances of very severe anemia plasma transfusions are actually dangerous, since there is a temporary dilution of the peripheral blood and consequently accentuation of the anemic state.

Certain foods are known to be high in iron content. These include such foods as parsley, lima beans, bran, various nuts, molasses, egg yolk, beets, prunes, figs and peaches.

Adequate Response to Treatment

After treatment is instituted, if the hemoglobin rises 1% each day this is considered to be a good response. In severe cases of hypochromic anemia, the hemoglobin increase may be as much as 2% or 3% daily. As the deficiency is corrected, the rate of increase gradually decreases. In those cases showing a very low red cell count, and in which the hypochromia is severe, there is an associated reticulocytosis as a response to iron therapy. This may be as high as five or six, and occasionally ten, per cent. It does not reach the high figures seen in cases of untreated pernicious anemia that are receiving therapy with liver extract.

Furthermore, as time goes on, a study of the stained smear will show a gradual decrease of the zone of achromia in the red cells, indicating of course a more adequate hemoglobinization of the

red cells. Finally, there will be a diminution or disappearance of those signs or symptoms that are referable to the anemia.

In conclusion, it should be emphasized that no anemia can be treated properly and satisfactorily unless it is correctly diagnosed; and this can be done only by careful laboratory studies. Any anemia with a color index of below one should require iron therapy. There is no indication for the administration of liver extract in the treatment of hypochromic anemia, and there is little indication for the use of mixtures of liver and iron and vitamins that seem to be so commonly employed by physicians today. Injectable preparations of iron are not desirable in the treatment of hypochromic anemia. In only occasional instances is it necessary to use blood transfusions, and plasma transfusions are contraindicated at all times. A daily dose of 15 grains of ferrous sulfate is all that is necessary to correct at least 90 per cent of all hypochromic anemias. It soould be markedly emphasized that the most important treatment of any hypochromic anemia is to correct the fundamental defect that is producing it.

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TWO NEW PROCEDURES IN DIAGNOSIS AND EXCLUSION OF ADDISON'S DISEASE

(F. J. Robinson, *et al*, in *Proc. Staff Meetings Mayo Clinic*, Sept. 10th, 1941)

PROCEDURE 1 (BASED ON VOLUME OF URINE)

On the day before the test the patient eats three ordinary meals but omits extra salt. No drink or food p. m. after 6. Until this time he drinks water as desired. At 10:30 p. m. he empties his bladder and discards the urine. All urine voided from then to 7:30 a. m. is collected, measured and saved for chemical analysis if necessary. Breakfast is omitted. The patient voids again at 8:30 a. m. and immediately thereafter he is given 20 c.c. of water per kilogram of weight (9 c.c. per pound) to drink the next 45 minutes. At 9:30, 10:30, 11:30 a. m. and 12:30 p. m. he empties his bladder. He is kept at rest in bed except when up to void. Each specimen is kept in a separate container. The volume of the largest one of these four specimens is measured.

Some patients having Addison's disease will excrete so little urine as to void only once or twice during the entire morning. In such instances the amount of urine excreted per hour may be calculated; frequently, however, such calculations are unnecessary because of the very low urinary output throughout the entire morning.

Inferences: 1. If the volume of any single hourly specmen voided during the morning is greater than the volume of urine voided during the night, such a response indicates the absence of Addison's disease. 2. If the volume of the largest hourly specimen voided during the morning is less than the volume of urine voided during the night, Addison's disease may or may not be present. To *establish* the diagnosis procedure 2 should be instituted.

PROCEDURE 2 (BASED ON CHEMISTRY OF BLOOD AND URINE)

Blood is drawn (preferably under oil) while the patient is still fasting, and the plasma, and the specimen of urine voided during the night, analyzed for urea and chloride. From these four determinations and from the results obtained from procedure 1 the following equation is solved:

$$A = \frac{\text{Urea in urine (mg. \%)}}{\text{Urea in plasma (mg. \%)}} - \frac{\text{Chloride in plasma (mg. \%)}}{\text{Chloride in urine (mg. \%)}} \times \frac{\text{Volume of day urine (c.c.)}}{\text{Volume of night urine (c.c.)}}$$

The term "day urine" applies to the largest of the hourly specimens voided during the day; "night urine," to the entire amount which was voided from 10:30 p. m. to 7:30 a. m. It is immaterial how these values are expressed provided that the same method be used throughout the equation. For example, if the concentration of plasma chloride is expressed as milligrams of sodium chloride per 100 c.c. the concentration of urinary chloride should be expressed in the same manner.

Inferences: These are as follows: 1. If the value of A in this equation is greater than 30, the patient probably does not thave Addison's disease. 2. If the value for this equation is less than 25, the patient probably has Addison's disease provided nephritis has been excluded.

If the results of procedure 2 are at all equivocal or if they are not indicative of Addison's disease when there is strong clinical evidence to the contrary, the test devised by Cutler, Power and Wilder may be conducted immediately. When this is done, none of the patient's time is wasted since the day of the "water test" constitutes the first day of the provocative test. Thus far we have encountered only two instances in which it was necessary to resort to the Cutler-Power-Wilder test and in these cases it also yielded indecisive results.

These conclusions are drawn from observations of 88 patients, 38 of whom had Addison's disease.

BACKACHE

(H. P. Mauck, Richmond, in a *Symposium on Industrial Health*, 1941)

Special exercises for disused muscles will relieve in some cases. Rest, protection and time are the 3 most important agents in treating the industrial traumatic back. In acute cases rest on a firm bed for one to 6 weeks, this followed by a laced plaster jacket for 2 or 3 weeks longer, then graduated exercises. Prolonged use of braces and belts, and operations, are to be reserved for the very exceptional case. Usually the results obtained in industrial cases are surprisingly poor.

Brilliant response was made to vitamin E therapy by a case of hereditary muscular atrophy.—R. J. Meller, in *Journal-Lancet*, Dec.

Recent Advances in the Treatment of Fractures of the Extremities*

James E. M. Thomson, M.D., Lincoln, Nebraska

THE TREATMENT of fractures is one of the oldest phases of the healing art. Earliest records of medical history reveal the fact that long before the time of Hippocrates well-founded principles governed the care of fractured extremities. Advances in this field of medicine have been slow and have gained precedence by long and successful trial. This process is accelerated by stimulating forces that occur during periods of civilization in which life grows hazardous or daring, as during war and industrial expansion, when fractures become so common that men treating fractures become acutely interested in bettering their efforts.

Whatever procedure is introduced into fracture treatment, it must meet the fundamental principles of good practice to become acceptable. Let us briefly review these time-honored principles. First, the procedure must obtain alignment and apposition of the fractured fragments. This is brought about by manipulation and by traction and counter-traction, thereby placing the controllable fragment in line with the uncontrollable. The second fundamental principle is to maintain the position and alignment until union and function have been reëstablished. It is accomplished by means of external fixation with a splint or cast, or by direct or indirect internal fixation, or a combination of the two. Any procedure that varies from the ordinarily accepted time-honored method must embody these principles before it can be recommended as good practice in fractures.

The particular interest in sulfonamides at the present time in the treatment of compound fractures is no exception to these rules. Here the principles of fracture reduction and immobilization have not been disturbed, but to them have been added chemotherapy which favorably influences the catastrophes that formerly occurred as the result of infection and gas gangrene. This greater understanding of the use of the sulfonamides in fractures is to me the outstanding advance that has been made in fracture treatment, but since this subject is to be considered later in the program I shall limit my discussion to merely this brief introductory comment.

Another advance in fracture treatment that is becoming more properly appreciated is the importance of adequately supporting or sustaining the soft tissues, and particularly the circulation. To an extent this has been realized in the form of proper splinting, bandaging and application of casts after reduction of the fracture. However, it is my opinion that greater importance should be given this phase of treatment before reduction; not merely as a first-aid measure but rather as a therapeutic measure. This is particularly true when the trauma has markedly impaired the circulation. Whether the fracture is compound or simple some impairment of the circulation occurs, and frequently little is done directly to help bring it back. We recognize the importance of treating systemic shock after trauma and before operative intervention. We should also recognize the importance of treating local shock to the extremities. Splinting of the extremity in a position that will give the greatest freedom of circulation, slightly elevated or inclining towards the great vessels and heart, hastens the flow of blood by gravity. Heavy, soft sheet-wadding bandages support but do not constrict the soft tissues that are injured. Even a cast splint, which has been completely cut and spread, gives further support to the soft structures. The work of Ochsner and DeBakey on blocking the sympathetic ganglions with procaine hydrochloride in the treatment of phlebothrombosis is, in my belief, epochal in that it offers a very safe method of stimulating circulation in traumatized shocked extremities; by so doing the vasoconstrictor impulses are interrupted and a greater opportunity is offered to reëstablish the normal intervascular and perivascular flow of tissue fluids, releasing the circulatory apparatus and increasing the flow of blood through the vessels. When the circulation of the lower extremity is markedly embarrassed as the result of trauma there is considerable probability of saving an extremity from amputation if the lumbar sympathetics are blocked. The same is true for injuries of the upper extremity when the cervical sympathetics are blocked. This better understanding of the importance of treating the local shock and impairment of the circulation is perhaps the second most important advance in the treatment of fractures.

*Part of a Symposium on Problems of Civil and Military Emergencies, Duke University School of Medicine, October 16th-18th.

Most advances in the treatment of fractures are not new, but rather are improvements on or modifications of old procedures. To illustrate: For a great many years internal fixation of fractured fragments has been practiced by many skilled, proficient fracture surgeons, with varying degrees of satisfaction and failure. The reaction of the tissues to ordinary steel was recognized as being responsible for untoward changes in the bony substance. With these degenerative changes the probability of complications and infection was great. Perhaps the next great advance in fracture treatment is the growing prevalence of internal fixation of fractured fragments by means of various so-called silent metals, such as vitallium, stainless steel, and combinations of alloys and stainless steel, which can be affixed to bone fragments without causing tissue reaction or interfering with normal bone healing. Please do not assume that I am advocating universal operative plating and nailing of fractures. Such radical procedures should never be considered until all approved closed methods have failed to bring a proper reduction. However, the growing demand on the part of the public for more accurate x-ray alignment often makes it desirable to attain more than merely a functional position of the fragments. In spite of public demand, I am positively convinced that if good weight-bearing alignment and full length can be obtained, with a relative-assurance that good function will result, one is never justified in compounding a fracture to improve the appearance of the fragments. The result obtained, even with the most skilled supervision and scrupulous technique, does not justify the hazard involved. If internal fixation is indicated it should be carried out as early as possible.

There are several things that are absolutely essential to successful fracture surgery.

1. The most meticulous technique must be adhered to from the time one enters the washroom until the final dressings and splint are applied. One can not approach bone surgery after a few minutes scrubbing, carelessly putting on gloves, putting one's hands here and there, or wiping them on the gown. The most minute breach in aseptic etiquette may lead to disastrous consequences.
2. Anatomic exposure with a minimum of additional trauma to soft tissues, periosteum and fragments is absolutely essential.
3. A cabinet-maker's training is necessary to accurately approximate the fragments and apply fixation properly.
4. An armamentarium of tools and apparatus that will meet every problem that presents itself must be at hand, such as appropriate retractors; periosteal elevators; a series of bone-holding clamps of various sizes to hold the different circumferences of the bone to be worked on; screws, plates and nails of every diameter and length for accurate adaptation to any fracture; drill points of various gauges to make holes of appropriate size for screws and pegs; motor and hand apparatus for using drills and saws; a series of screw-drivers with which to put in the screws; and wires and pins galore. Of course, with all of this skill in handling these tools is necessary.
5. A well-trained team of assistants.

One must remember that every hospital is not set up to do major fracture surgery. The surgeon who attempts such a procedure without every factor available for successful operation, in this day and age, is opening himself to criticism and trouble. To make internal fixation successful it must not only be done with precision and accuracy but it must absolutely fix the fragments firmly together. A single plate is seldom sufficient to assure firm fixation. The long bones such as the humerus, the femur and the tibia are particularly susceptible to torsion and strain and demand fixation in more than one plane (*Fig. No. 1*). Two plates of sufficient length and with a sufficient number of screws,



Figure No. 1.—Comminuted fracture of the tibia held with plate bent to conform to the contour of the bone. Cross screws at right angles to the plate to insure fixation.

or with screws staggered through a different plane, are usually adequate in oblique fractures. To insure good fixation it is essential that every screw used should fit tightly and cut its threads through not only one cortex, but through the opposite cortex as well. When this work is rightly done it should give results that are extremely gratifying, from the anatomical, the x-ray and the functional standpoint. One can get by with a shabby x-ray appearance in a closed reduction, but a precise align-

ment and firm fixation are essential to the success of an open reduction. When closing the wound we always fortify the area with a coating of sulfanilamide or sulfathiazole; not that we suspect a breach in technique, but purely as a precautionary measure.

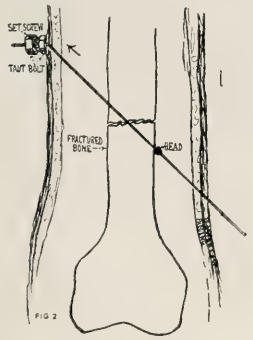
When should plates and screws be used? First, when closed methods fail to bring reduction to a sufficient degree to insure economically good functional union and weight-bearing; second, when it is difficult to immobilize the fragments sufficiently to obtain a good union; third, when it is desirable to obtain early function of an extremity, particularly when the injury is in or near a joint.

There are a few surgeons so adapted to the technique of taking and applying satisfactory bone grafts in fresh fractures that they advocate this procedure when operative surgical intervention is demanded. In my opinion the autogenous bone graft has little place in the treatment of fresh fractures, because its use inflicts additional trauma on an already injured extremity, or to the other extremity that may be used as a donor. However, in the treatment of old non-unions they have a distinct place and are of inestimable value because of their increased calcium proclivities, and when firmly affixed to the fragments after proper reduction union is usually assured. Such grafts should be wide enough and thick enough to give stability and security, and are often used in parallel pairs on either side of the fracture and fixed by means of bone pegs (Campbell) wires, (Miller) (Thomson) or stainless steel or vitallium screws.

One of the safest and simplest methods of internal fixation is accomplished by the use of beaded wires with cross traction placed on them. The advantage is that when callus forms the wires can be removed. This procedure was developed by Dr. Ferciot and myself and published in *Surgery, Gynecology & Obstetrics* in April, 1937. It is somewhat similar to the methods advocated by Dr. Oscar Miller and Dr. Warren White, with respect to the use of wires for fixation. It was originally developed to hold fragments of the femur on which a bone-shortening operation was performed to equalize the length of the legs. Later it was found advantageous in the treatment of certain fractures that offered problems of maintaining reduction (*Figs. 2 & 3*).

So much has been written about internal fixation of fractures of the hip that it hardly seems appropriate to take your time on this phase of the fracture problem. However, with my modest experience with this method, I am convinced that, even though one gets quite satisfactory results by nailing hips that are incompletely reduced, only perfect reduction with precise internal fixation should be considered adequate or acceptable. The mere fact that a hip appears to be in good position in the antero-posterior x-ray picture is no reason whatsoever why one may not find the head rotated and not in alignment with the neck, and the nail at the wrong angle or not embedded in the head when a lateral x-ray picture is taken. Therefore, the x-ray examination is incomplete unless exposures are made in two planes of the hip joint.

The methods of reducing fractures of the hip devised by Dr. Guy Leadbetter is an important contribution to the problem. It offers a test of hip stability after the reduction that is helpful, but it is not absolute assurance of adequate reduction. This can be ascertained by not only an antero-posterior x-ray picture, but a lateral as well (Figs.



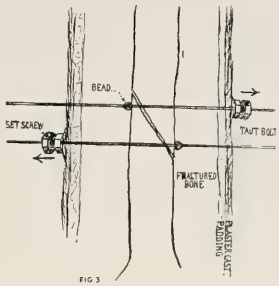
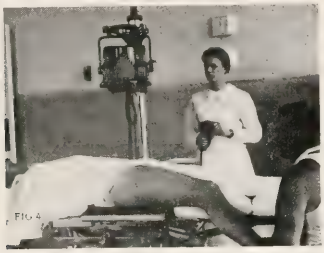
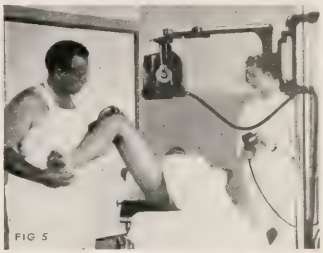


Figure No. 2.—One beaded wire used to maintain apposition of uncontrollable fragment held in position with taut bolt against plaster cast.

Figure No. 3.—Beaded wires used in oblique fracture hold fragments together by taut bolts against cast opposite to beads.

4 & 5). With the hip flexed at ninety degrees, abducted and held in internal rotation while being brought to this position, the lateral x-ray picture can be taken with the tube and cassette holder in the same position at which the antero-posterior picture was taken.





Figures Nos. 4 & 5.—After taking the anterior-posterior x-ray picture of the hip (Fig. 4) the thigh is flexed to 90° and abducted but held in internal rotation. The lateral x-ray picture is taken with the tube and plate in the same position (Fig. 5).

Again, one who attempts this type of surgery must be prepared with an appropriate armamentarium of apparatus to insure success. A shock-proof x-ray unit with a cassette plate changer, by the use of which antero-posterior and lateral pictures can be taken freely during the process of manipulation and nailing, is essential. A supply of nails of various sizes and lengths should be on hand in order to insure the nail used will be of the proper length. The anatomical bearings and relationship of the parts involved must be thoroughly understood if this nailing procedure is to be carried out accurately. The neck in its smallest portion is little more than an inch in diameter, and often one without much experience or the help of angle-finding devices will have difficulty in properly implanting the nail in the reduced fragments. One can not be satisfied with anything less than perfection. When it seems impossible to reduce the fracture by the Leadbetter manipulation one must assume that there are factors about this fracture which prevent reduction. Surgical exposure of the fracture site is then indicated. Very often it is found that the angle of the fracture is such that impingement is difficult; the obliquity may allow the head to slide upward and rotate when reduction is attempted. Also, we have found fragments of capsule and fatty tissue interposed, which make reduction difficult and allows the head to rotate on the neck. When Vernon Thompson, out on the West Coast, exposes such a fracture he cuts away sufficient of the distal neck fragment to place the femur in a valgus position with the neck, and with the fragments so reduced in situ the nail can be accurately driven home. A cast is seldom used. Traction is maintained for a few weeks, but the patient is allowed to sit upright in bed as early as desired. Weight-bearing should not be allowed for six months, but with crutches considerable freedom is allowed in three months. It is remarkable how little shock there is to all this when properly done; but for one unfamiliar with the manipulative technique and anatomical approach, and who slashes indifferently through soft tisssues of the upper thigh and hip joint without regard for circulation, fascial planes and anatomical possibilities, grave consequences may be in store. When such fractures are found in very old persons—and this should apply to all fractures in the old—we have found that it is much better to apply traction or splints for twenty-four, forty-eight, or more hours and allow time for recovery from the shock of the accident, fortifying the patients with glucose intravenously and forced fluids, supporting the circulation locally, and generally building them up prior to operative intervention.

Trochanteric fractures of the femur seem to unite in spite of the treatment used. A good spica cast, or old Buck's extension, and other extension devices have served admirably. Perhaps the best external fixation apparatus is the well-leg traction cast devised by Hoke many years ago. It was modified early by me in the form of double leg casts, and improved upon by Roger Anderson, Warren White and others. This allows the patient the freedom of sitting up immediately and moving about considerably. However, many of these fractures can be adequately fixed by a flanged nail and

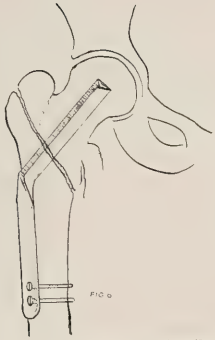




Figure No. 6.—V-shaped nail wih femur plate used for trochanteric fractures.

Figure No. 7.—Compound, comminuted fracture from gunshot wound, with three half-pins into the upper fragment and wire and Steinman pin through the distal fragment (Courtesy Dr. Roger Anderson).

plate down the shaft of the femur (*Fig. 6*), thereby doing away with all casts, splints and traction apparatus and allowing the patient to be on crutches within a week or so. More recently, with gratifying results, we have used a V-type flanged nail which has a continuous U-shaped lower portion that forms a plate along the upper shaft of the femur. We feel that any such procedure which allows early unimpeded mobility and locomotion makes for a decided increase in mortality, particularly in older people.

Many splint manufacturers have developed apparatus with which wires and pins can be used above and below, distant from the fracture, for traction and counter-traction and reduction of the fragments. One who has had sufficient practice in fractures may become adept in their use, but I assure you that in many cases it takes a great deal of experience and considerable exposure to x-rays under the fluoroscope to obtain accurate position of the fragments. Perhaps the most versatile of these appliances is the Roger Anderson type, with which you can do almost anything, if you can master the various single- and double-pin combinations. It has, however, found a place of usefulness in certain severe compound infected fractures in which full length and position can be obtained and held by embedding the pins in the cast. A castless technique has been more recently developed by Dr. Anderson by which an external longitudinal brace is attached to the pins embedded above and below the fracture and maintains the reduction while the entire extremity otherwise is unsupported (*Fig. 7*). I have had little personal experience with this method, but it has found favor with the American group in England during the present war. However, most of my compound fractures are cleaned up within a few minutes to a few hours after the injury, and we have preferred to depend on a vitallium plate or screw fixation and sulfanilamide or sulfathiazole used locally and orally. Our results have proved gratifying when the cases were cleaned up early. There is no doubt that in fractures of the tibia and fibula and shaft of the femur particularly this traction and counter-traction is a splendid device.

Last, but not least, I wish to take up the subject of fractures of the patella with separation of the fragments which is becoming a more common injury. Fractures of this sesamoid bone with little osteogenic reparative power have long been a problem, and because of its superficial location it has lent itself to surgical exploitation. There are three schools of though in regard to treatment of fractures of the patella with separation of the fragments. Each of them applies a surgical procedure. These may be classified as:

I. The restorative treatment of fractures of the patella. By this is meant the reassembling of the fragments, as near as possible to their former anatomical position in relation to each other, suturing about them with some foreign material, such as catgut, kankaroo tendon, fascia, silk, or wire. Other ingenious methods have been used, such as and screws. All of these methods adroitly used acpins, fixed traction wire devices; bone grafts, pegs complish the desired reapposition. However, their high aims too often fall short of giving an ultimate restoration of contour, particularly on the gliding surface of the patella; and tend to sequelae in the form of non-unions, arthritic joint changes and mechanical obstructions to function.

II. Excision Treatment. There is a growing

popularity on behalf of complete excision of the fractured patella, with remarkably satisfactory results. Brooke maintains that the extension power is even greater after the patella has been removed; that the function of this sesamoid is nil; and that as a structure it is a vanishing rudiment of evolutionary progress. Herzmark, on the other hand, considers the patella a necessary protection to the knee joint, adding to the power of extension by carrying the quadriceps away from the joint. I agree in part with both these views, and believe that although the patella can be removed with little apparent loss of function, one must give due consideration to the fact that the knee joint is the largest, most exposed, and most vulnerable joint in the body, and that the patella forms an important protection or buffer to the widely exposed condyles of the femur, particularly in flexed positions. Therefore, since flexion of the knee is the position in which most fractures of the patella occur, the complete removal of this buttressing sesamoid opens the exposed condyles to the constant possibility of minor and severe direct bruising injury which could lead to interarticular changes and ultimate future disability. From the standpoint of a compensation or insurance case the removal of a whole bone, sesamoid or long bone, and resultant defect, constitutes in itself substantial damage and potential disability.

III. Plastic tendon repair and removal of loose

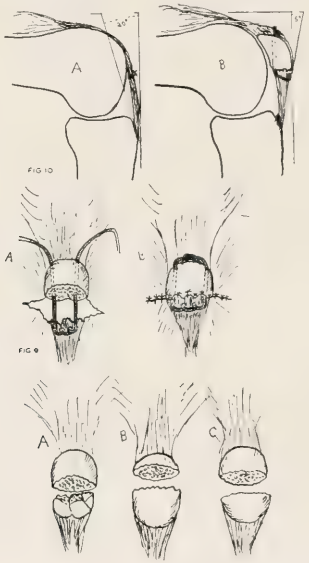


Figure No. 8 (A, B & C).—Types of fracture of the patella suitable for removal of all but one fragment and plastic repair of this to patellar tendon.

(A) Fracture of the lower pole, comminuted or transverse. Here the lower fragments are removed and the tendon sutured to large upper fragment.

(B) Represents exactly the opposite of (A). Here the fragments of the upper pole are removed and the tendon is fixed to the large lower fragment.

(C) Represents a common transverse fracture. Here either fragment can be removed, the larger usually is firmly attached and is left intact.

Figure No. 9 (A & B).—Technique of repair (A) after loose fragments have been removed. Drill holes are made through the patella longitudinally, suture is passed through one side and firmly embedded into the tendon, then brought up through the second drill hole. The tendon and patella are drawn together (B) and firmly tied. The lateral structures are carefully repaired by suture.

Figure No. 10 (A & B).—Excision of the patella after fracture removes not only its protective influence in front of the condyle but the angle of pull is reduced to 20°—less than a right angle—necessitating an increase of energy to extend the leg.

(B) On the other hand a fragment of the patella protects the condyles and increases the angle of pull 5 degrees beyond a right angle thereby adding fulcrum power to the extensor apparatus.

fragments. To the limitations of the two methods just described may be ascribed the growing popularity of a third method, based on removal of all but a single attached fragment. This fragment may form either the distal or the proximal pole of the patella and the opposing patellar tendon is sutured to and through this remaining fragment.

This method of plastic repair of the tendon after removal of the loose fragments was brought to the attention of the Orthopedic Section of the American Medical Association by an article in a paper by me in 1934. My associates and others have published supplementary material on this method. To evaluate the appropriateness of the procedure the leading plastic surgeons working with fractures were canvassed by questionnaire, with the result that six hundred cases were studied. The remarkably low percentage of disability following this method of treatment led to the following conclusions:

1. Fractures of the patella are often severe and accompanied by complicating injuries which influence the ultimate result.

2. The objective of the treatment should assure the restoration and functional integrity of the knee joint..

3. That plastic repair of the tendon and removal of loose fragments of the patella:

a. Eliminates the problem of union of bone fragments, changes the problem from one of treating of fractures to one of treating a tendon repair.

b. This method leaves no mechanical obstructions of the gliding surface over the condyles of the femur.

c. It reduces the number of factors that contribute to arthritic changes, in the way of an irregular articulating surface of the patella on the condyle.

d. The protective mechanism of the patella is retained to the knee joint.

e. The leverage and pulley mechanism is likewise maintained.

f. The problem is reduced to one of soft-tissue healing.

g. Thereby the period and amount of disability are shortened.

Summary

It is fully appreciated that this constitutes one man's opinion with respect to recent advances in the treatment of fractures, a personal impression; but I am sure that most surgeons familiar with these problems will agree with respect to the tremendous influence the sulfonamides have had on the treatment of fractures; also as to the great help that stainless steel and vitallium plates, screws, nails have been in fixation of fragments, although there might be some diversity of opinion with regard to the importance of protecting the extremity against local shocks and the use of pins, wires and special gadgets.

The comments with regard to fractures of the patella are generally accepted, the method of removal of the loose fragments and plastic repair of the tendons reduces the problem so markedly because of the diminution in period and amount of disability.

PEPTIC ULCERS HEAL WITHOUT THE USE OF ALKALIS

(G. F. Dick and C. W. Eisele, Chicago, in *Jour. A. M. A.*, Jan. 3rd)

Under hourly treatment with milk and cream without the use of alkalis, the speed of healing of gastric and duodenal ulcers compares favorably with that under other methods of treatment. Such treatment of a series of 41 patients brought about (1) the prompt disappearance of symptoms and the complete comfort of the patient, (2) the disappearance of . . . blood from the stool when such was present and (3) the disappearance of the cavity of the ulcer as revealed by x-rays.

These doctors say it is commonly assumed that complete neutralization of gastric acidity represents the ideal condition for ulcer healing, and that no proof of this assumption exists. It is not certain that the highly alkaline stomach content obtained periodically in the course of alkali therapy is conducive to healing.

In their series, 7 patients were suffering from gastric ulcers and 34 from duodenal ulcers. X-ray studies were used to determine the progress of the treatment. Seventy per cent of the craters of duodenal ulcers disappeared within seventy-five days. As others have noted, the authors say, complete relief of symptoms occurred in nearly all cases long before the crater disappeared. In 31 cases all symptoms were controlled within one week.

PROSTIGMINE FOR IMPAIRED HEARING

(Morris Rosenthal, New York, in *Arch. Otol.*, Sept., 1941)

The treatments began with the application of a large nasal tampon saturated with a 10 per cent solution of mild protein silver. This was left in place for thirty minutes, and its removal was followed by irrigation and suction. Then an intramuscular injection of 1 c.c. of a 1:2000 solution of prostigmine methylsulfate was administered. For children a 1:4000 solution was used. The treatments were given three times a week or as close to that as could be managed.

Thirty cases of impaired hearing are reported. In 24 the impairment was chronic and in 1 acute. In 5 cases the impairment of hearing had been present less than six months. Nineteen patients complained of tinnitus aurium. Nineteen patients, 6 with acute and 13 with chronic impairment, showed objective improvement of hearing; 16 showed subjective improvement, and 9 showed no improvement. Two patients reported that the condition had become worse. Sixteen said that tinnitus had disappeared or diminished, while 3 reported no abatement of tinnitus. Eleven showed objective improvement of hearing in all frequencies, while 3 showed loss in all frequencies and 16 showed loss in some frequencies and gain in others.

Cesarean Section*

Review of Thirty-nine Consecutive Cases

PAUL MCBEE, M.D., Marion, North Carolina

TO ATTEMPT is here made to review the literature of cesarean section. It is profitable, however, to stop at times and give thought to the reasons why we do certain things. My intent is to explain to you, and to myself the reasons for performing these operations upon this group of patients. Some are conveniently reported by groups, while others merit individual consideration. It is highly probable that I may not be agreed with in all instances. These patients have been operated upon over a period of nine years, and they represent some of the more urgent obstetrical problems in the practices of ten different doctors. All of the operations have been performed by one surgeon.

There appears to be fairly general agreement that a fetal head too large to go safely through the pelvis, constitutes the most usual reason for performing cesarean section. There is, however, great disagreement as to exactly what relative measurements constitute a disproportion. In sixteen cases my doctor friends and I decided from the evidence afforded by pelvic measurement, by x-ray examination, and in some cases by test of labor, that a surgical degree of disproportion existed. The ages of these patients ranged from eleven—a child illegitimately pregnant—to forty-four years. The child was delivered of a seven-pound child safely by this operation. She later was married at fourteen, and her pelvis had grown sufficiently to allow spontaneous delivery of a second child when she was nearly sixteen.

Ablatio placentae is a very dangerous complication of pregnancy and labor. Treated by means other than cesarean section it is almost uniformly fatal to the child, and very frequently fatal to the mother. All six mothers in this group had the remarkably good fortune to escape with their lives, and five babies survived.

In five cases of placenta praevia the operation was done. All of the mothers and babies survived. There are other accepted ways to manage this complication, and I would not want to create an impression that all must be surgical. Unless, however, delivery can be easily and rapidly accomplished through the vagina the best results are to be obtained by cesarean section.

Three patients who had previously given birth to all of the children they desired and could support were operated upon largely to accomplish sterilization. The indications were economic and social. I am not convinced, however, that a laparotomy for sterilization at a later date is vastly safer than a cesarean section properly performed.

Two patients had heart disease. One had rheumatic valvular disease with good heart function, but there had been previous decompensation, and it appeared unwise to allow her to go through a labor. She was sterilized. The other patient's case was remarkable. An elderly primipara was brought to the hospital apparently dying of congestive heart failure. She lost consciousness soon after admission and it appeared that death was imminent. Since she was near term, and the fetal heart appeared to be good, permission was obtained from her husband to perform a post-mortem cesarean section. It appeared that every breath might be the last, but she did not die as quickly as was expected. While waiting with knife in hand to deliver the child the moment that the patient expired, I decided that since the operation was solely in the interest of the child it might as well be performed before death. Immediate operation probably would not hasten the mother's death more than a few minutes, and the child might have a better chance. Using a small tray of sterile instruments, which are kept for accidents, and with the patient still on the stretcher, this operation was quickly performed.

Local infiltration of the skin with novocain was the only anesthetic required. As soon as the baby was removed the patient began to breathe better. One of our nurses suggested that she might improve with alpha lobelin intravenously, and that an oxygen tent might help. Use of these agents resulted in a vast improvement of the pulse and respiration. The rales in her lungs gradually disappeared, consciousness returned and she recovered from the operation. The baby, the sole object of the operation, lived only about twenty minutes. It never did breathe right. This patient might have improved with oxygen had the section not been performed. There are some things which we shall never know. At any rate, it pays to have a smart nurse around when dangerous things are going on.

Two patients had fibroid tumors. One classical

*Presented to the Thermal Belt Medical Society meeting at the Smith Baby Hospital, Saluda, N. C., July 17th, 1941.

and one Porro section were done and both mothers and both babies survived.

One operation was performed to repair a large ventral hernia, deliver the patient, and sterilize her. Having noted the extra room in the abdomen at other cesarean operations, I deliberately planned to take advantage of this relaxation to get the patient's belly wall back together again. The outcome left nothing to be desired.

Obstetricians and surgeons sometimes make mistakes which are embarrassing and avoidable. Upon the recommendation of her physician, and without sufficient investigation, I performed, late at night, a cesarean section upon a four-gallon hydramnios and delivered a three-pound infant. The baby had club feet, was poorly developed otherwise, and lived only a few hours.

One patient with advanced arteriosclerosis had a stroke with complete left hemiplegia early in labor. A cesarean section was performed under local anesthesia to save the child and to stop the labor. The patient regained consciousness, recovered from the operation, and eventually got over her hemiplegia. Her circulation is hopelessly crippled, but she is alive and has a fine child.

Two patients had toxemias. One, a primipara with a none-too-roomy pelvis, was operated upon a week after she had recovered from eclampsia with convulsions. The other, the niece of a prominent Asheville physician, had an ample pelvis but was a primipara thirty-two years old. She began to have hypertension and nephritis when she was five-months pregnant an did not improve on rest in bed. Termination of the pregnancy was advised, and a conultation requested, but the patient herself suggested that a cesarean section might be performed as soon as I considered the child to be viable. She insisted that she would rather take her chances with the toxemia for a few weeks in order to be delivered of a viable child. She was operated upon at the seventh month and a living child delivered. The child has done well and the mother is pleased.

I have not performed cesarean section upon patients with breech presentation. I would perform it if a disproportion existed in addition to the breech.

There were two twin pregnancies in this series, but both operations were done upon indications other than the presence of twins. One patient was referred to me by a well known obstetrician in Richmond. He did not know that she had twins and neither did I until the operation. Fortunately I discovered the second baby before closing the incision in the uterus.

One patient had ether, seven had local, and thirty-one have had spinal, anesthesia. A great many of the best obstetricians are bitterly opposed to spinal anesthesia, but it has been highly satisfactory in my cases. It should not be given to any patient who has a precarious circulation.

Twenty-one patients had classical, fourteen had low-cervical, and four have had Porro, operations. I think that three of the Porro sections might have been replaced safetly by the low-cervical method.

Thirty-nine consecutive cesarean sections are reported with no maternal deaths and only three fetal deaths.

My wife very kindly made colored moving pictures of one of my low cervical cesarean sections to show at this meeting. For publication, Miss



Helen Lorraine has prepared a beautiful drawing which is self-explanatory.

CHRONIC SUBDURAL HEMATOMA OF THE CEREBRUM

(E. F. Fincher, Atlanta, in *Sou. Surgeon*, Aug., 1941)

Twenty-four cases of chronic subdural hematoma are reported. Twenty-three of these cases have been treated with simple trephine exposures with destruction of the hematogenous membranes, and dependent drainage at the time of operation and for twenty-four to forty-eight hours following operation. One death occurred in the series. There were no secondary hemorrhages nor have there been any symptoms of a return of the subdural hematomas in any of the twenty-three cases now after a lapse of one to seven years. It is concluded, that in the highest percentage of chronic subdural hematomas, simpler surgical procedures are preferable to the more formidable craniotomy.
—384 Peachtree Street, N. E.

Local and Parenteral Use of Sulfonamides*

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THE PURPOSE of this paper is to present briefly our own experiences with the local and parenteral use of the sulfonamide group of drugs in the prevention and treatment of infections which lend themselves to this form of therapy. We hope to arouse curiosity and discussion, and to induce a trial of these methods in cases which require sulfonamides, but in which, for one reason or another, their oral administration is undesirable, unsatisfactory, or impossible.

Sulfonamides are indicated locally in traumatic wounds, in surgical wounds which are grossly or potentially contaminated at operation, and in supposedly clean wounds in which the development of infection after operation would be particularly damaging.

When wounds are contaminated but as yet uninfected, our procedure has been to attend to all surgical details prior to closure. Then we dust the wound layer by layer with sulfanilamide and/or sulfathiazole powder as we close it. The dose usually is from 2 to 8 grams. We do not use drains in these wounds because we feel that a saturated solution of the sulfonamide in whatever serum may be present is exactly what we wish to leave. When an abscess is present we employ drainage, plus the local dusting of sulfanilamide and sulfathiazole throughout all layers of the wound, and usually we close the various layers up to the drain. We feel that sulfanilamide is the drug of choice in the local treatment of wounds but we have also used sulfathiazole, and in some cases a mixture of the two powders. Apparently the two drugs maintain their separate chemical identities even when they are in solution together.

The question of sterilizing sulfanilamide and sulfathiazole powder arises. In the light of what we believe about the local bacteriostatic action of these drugs there is some doubt about the necessity that they be sterile. To date we have been using crystalline sulfanilamide and sulfathiazole which is clean but not sterile. We have had no bad results from the use of these unsterilized powders but since sterile sulfanilamide is now available in ampules, we feel that it should be used, at least in clean wounds. Tetanus spores might conceivably be introduced with an unsterilized sulfonamide. This would be no problem in traumatic wounds because we would give tetanus antitoxin anyway, but it might prove serious otherwise.

These drugs applied locally to wounds with abscess formation and tissue destruction may be of some value, but our exeprience with this is too limited for us to even have an opinion.

There appears to be justification for the use of sulfanilamide powder locally for dusting, or the drug as an ointment in the treatment of surface wounds such as abrasions and burns.

We wish to make ourselves very clear that the local use of these drugs will not take the place of adequate preliminary treatment of the patient for shock; or of the administration of antitoxins which may be indicated, of proper cleansing, thorough debridement, accurate hemostasis, careful suturing, gentleness, or of any other agent or measure generally recognized as in consonance with surgical principles in the treatment of wounds. These drugs are foreign materials and may have some undesirable effects upon wound healing; but their bacteriostatic action indicates their use until we find a better way to control infections.

Parenteral use of the sulfonamides is indicated when the drugs are not tolerated by mouth, when there is faulty absorption from the gastrointestinal tract, and when prompt action of the drugs is an important factor in the prognosis. By giving a sulfonamide parenterally it is possible to produce and maintain the desired concentration of the drug in the case of any patient, who does not show symptoms of sulfonamide toxicity. In some illnesses in which benefit would be derived from sulfonamide therapy—*e.g.*, spreading peritonitis—it may not be wise to give any medication by mouth. This leaves the parenteral method as the only route by which the drug could be administered.

The time when sulfonamides do the most good is early in the disease. If a pneumonia patient who is inclined to vomit his sulfapyridine, sulfathiazole, or sulfadiazine could be given the drug parenterally in sufficient dosage to insure an immediate and adequate blood concentration his chances for a prompt recovery would be enhanced materially.

Sulfanilamide, which is the most soluble of these drugs, may be given subcutaneously or intravenously. A solution of 0.4 to 0.8 per cent sulfanila-

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mide in normal saline is used. The dosage is gauged according to the size and age of the patient and the judgment of the physician in the individual case. As a rule from 4 to 8 grams of sulfanilamide once daily is found to be adequate for grown patients.

Neoprontosil may be given intramuscularly. It is supplied in 5 c.c. sterile ampules of 2.5 and 5 per cent solutions in distilled water. Sodium sulfapyridine may be given intramuscularly in 33 1/3 per cent solution. Grown patients are given 6 to 10 c.c. at the first dose and then 3 c.c. every four hours. Sodium sulfathiazole may appropriately be given in the same manner and dosage. When this method is used the injections should be made deep into a heavy muscle.

The sodium salts of sulfapyridine and sulfathiazole may be given intravenously. From 3 to 5 grams is dissolved in 100 c.c. of distilled water and given as an infusion once daily to adults, or the estimated daily requirement may be divided into individual doses to be given at intervals *pro re nata*. Our patients have had no resultant trouble in their veins, but other authors report some cases of chemical phlebitis with thrombosis.

At times it is desirable to combine the use of sulfonamides locally and parenterally, as in appendicitis with rupture. When the rupture is recent and no walling-off has occurred it is our custom to remove the appendix and aspirate the pus and exudate; then lightly dust as much of the contaminated peritoneum as we can reach through a small incision with sulfanilamide powder, lift up the cecum and place two grams in the right iliac fossa beneath the cecum, close the peritoneum without drainage; and, as the wound is being closed, dust every layer of tissue with sulfanilamide. For three successive days following the operation the patient is given a hypodermocylysis of 0.8 per cent sulfanilamide in normal saline. The dosage varies with the size of the patient. Average adults will tolerate 8 grams daily. Narcotics, other parenteral fluids and transfusions are indicated in many cases; oral hygiene, supportive treatment, and good nursing are not to be neglected.

We have to accept some very real hazards with the parenteral administration of these drugs because some of the reactions are unpredictable, and, once in vein or muscle, the dose can not be withdrawn. It is true that we may discontinue an intravenous or subcutaneous infusion at the first sign of danger, provided, of course, that we anticipate danger; but in intramuscular injections the entire dose is immediately beyond recall. This does not mean that we should not use these drugs parenterally. It just means that we should very carefully limit their parenteral use to definite indications. We should remember that much of this work is still in the experimental stage and we should not be hasty in reaching conclusions.

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THE SYNTHETIC SEX HORMONES USEFUL IN MANY CONDITIONS

(C. P. Lamar, Miami, in *Jl. Fla. Med. Assn.*, Nov.)

Stilbestrol orally furnishes a physiologic level of estrogenic activity comparable with that of the active ovary, and is much less expensive than the natural estrogens.

Toxic reactions seem to depend mostly upon individual idiosyncrasy, and are nausea, usually transient, and vomiting which can easily be suppressed by discontinuing the drug.

The average dose potent enough to suppress hot flushes is 1.0 to 2.0 mg. orally daily.

Toxic symptoms in a few individuals independently of size of the dose. Patients who are not sensitive tolerate fairly large doses without ill effects.

The androgenic potency of testosterone proportionate adminstered subcutaneously in oil is already a classic fact.

As in estimating the results of stilbestrol therapy in the menopausal syndrome, mostly hot flushes were used as an index of results obtained in the cases of the male climacteric.

Most of the dosages reported are entirely too high. The oral use of methyl testosterone alone might be insufficient in testicular insufficiency of long standing. With symptoms of the male climacteric start treatment with a few injections of testosterone propionate; and after sufficient clinical improvement a maintenance dose of methyl testosterone of 10 to 30 mg. a day orally; rarely 40 mg. Larger doses in the treatment of diabetes, coronary disease, peripheral vascular disease and other diseases common with aging. When sexual stimulation is the main feature, the smaller doses seem to give much better results.

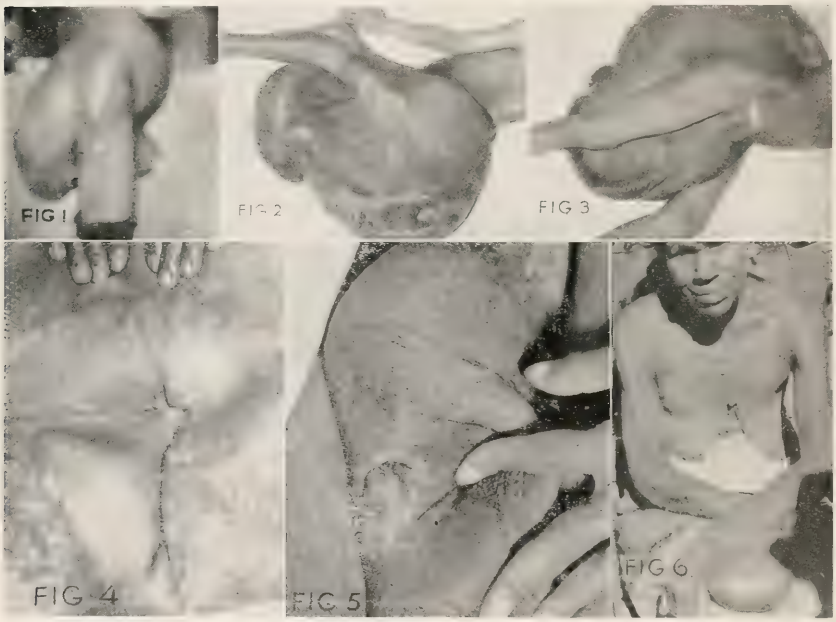
Sacrococcygeal Tumor

E. Pierre Mallett, M.D., Hendersonville, North Carolina

SACROCOCCYGEAL TUMORS are of many classes, among these being dermoids, lipomas, teratomas and lymphangiomas. They all seem to take their origin in the remnants of the postanal gut and neurocentric canal. Many of these tumors remain small and produce no symptoms. Sometimes they are recognized at birth, in other cases not until later years when they grow slowly or rapidly, in the latter case taking on carcinomatous features. In some cases they reach considerable size and produce marked discomfort and deformity.

Congenital lipomas of the sacrococcygeal region differ from ordinary lipomas in that they are diffuse, not encapsulated, tumors. A protrusion of the dura between the sacrum and the coccyx may occur without any bony deformity, thus forming a meningocele. In such cases the cavity of the spinal membranes, containing fluid, may then grow beneath the skin over the junction of the sacrum and coccyx. In some cases a congenital lipoma, a teratoma, a lymphangioma, or a combination of a lipoma and a lymphangioma, may cover the meningocele.

Teratomas are irregular, pendulous tumors, which are attached to the posterior surface of the sacrum or coccyx. One class contains the rudiments of skeletal and of different visceral remains of parasitic fetus, whereas another is composed of a variety of tissues which do not represent any single organ. Cystic tumors behind the rectum are joined between the rectum and sacrum. Dermoids, whose origin is generally conceded to be in the misplaced portions of the posterior intestine or postanal gut, also occur within and behind the rectum.



Sacro-coccygeal tumor or congenital lipoma

Fig. 1.—At age 20.

Photographs by courtesy of Dr. Deryl Hart, Duke Hospital, Durham, N. C.

Fig. 2.—At age 36, postero-lateral view.

Fig. 3.—At age 36, antero-lateral view.

Fig. 4.—At age 36, posterior, close-up of rectum.

Fig. 5.—At age 36, anterior, close-up of urethra.

Fig. 6.—Mother of patient.

To me the case to be described is so unusual that I feel it my duty to the profession to report it and to submit the remarkable photographs (for which I am indebted to Dr. Deryl Hart of Duke Hospital) since in a lengthy practice and large hospital experience, extending over a period of fifty years, I cannot recall another case similar to this one.

Report of Case

In March, 1920, a Negro boy aged 20 was examined for a peculiar-looking hump on his back, which showed very distinctly through his clothing. The examination revealed a large sacrococcygeal tumor or congenital lipoma growing from the lower part of his spine, as shown in figure 1. Some operative procedure seemed possible, but he declined to consider the removal of the growth as the only means of relief.

In October, 1935, the patient, now aged 36, was re-examined. As he lay on his side, a large rounded tumor extended backwards and downward reaching below his knees, as shown in the posterior close-up; and the bowel movements came through a long, funnel-shaped opening much lower down than the original anus, as shown in the posterior close-up. The growth also spread over the perineum, completely enclosing the testicles and penis. The penis could be felt through the growth; and urine was passed through a small opening in the mass several inches below the penis, as shown in the anterior close-up. This projecting mass had grown so large and heavy that the patient could not support it on standing up, because it hurt his feet; hence, he had been in bed for three years. When he lay on either side, the tumor extended out in the bed behind him. When he wished to change sides, he had to raise up the tumor and slide his body under it. Since he preferred to lie on his left side, the tender surface had become raw, bled easily, and had to be dressed with gauze. The patient was sent to Duke Hospital and was seen there by the attending surgeon and all of the staff. He enjoyed being the center of attraction but refused an operation, since he could not be assured of recovery.

In 1940, when the patient, now aged 41, was next examined he was much emaciated, losing flesh and strength rapidly, but cheerful and bright. The tumor had lost its rotundity and resembled a large, punctured football extending out on either side. The patient died June 30, 1940, following an operation in a Charlotte hospital.

COMMENT

Examination of the patient's mother showed her entire body to be covered with lipomas, small to medium size, which would indicate that she was certainly capable of bequeathing such an endowment to her son. Therefore, the lesson that this monstrosity suggests to me is that every infant at the time of delivery should be carefully examined for small tumors or malformation of the rectum and genitals and be operated upon immediately during the first hours of his or her life, if necessary. This was forcefully impressed upon me by seeing the tumor and live baby (from whom it was removed) shown by a doctor, whose name I do not recall, at a recent meeting of the Tri-State Medical Association in Columbia, South Carolina.

PREMARITAL CONSULTATION

(R. L. Dickinson, New York, in *Jl. A. M. A.*, Nov. 15th)

Our profession has no option. We have been given the job to discover the ties between goodness and gonads, between the new hormones and the new harmonies, to take part in the new programs for homes-for-life. The colleges and the country are rapidly awakening to the need of guidance in this protective function and the number of books on the sex life that are being issued call for a reasonable share in responsibility for the printed word.

I am proposing, then, that, for medical aspects of instruction for marriage, both close to the event and in long-range education for it, we undertake formal action. The Association has circulated a million pamphlets on sex education. Let this Section with the help of the neurologists and psychiatrists urge collaboration with various groups working in collateral fields and with the best of the agencies active in the region of sex education. Let our representatives appear on the program of those conferences on the family which have been started in several parts of the country. And, as individual men and women, let us fully face our responsibility for the mental hygiene of marriage, in penance for some of our neglects and timidities.

Success in marriage and in parenthood is teachable. Enlist effort enough, use intelligence enough, be courageous enough in this era of swift change in mores; and divorce and disaster in home-making can be minimized, security safeguarded, a new outlook forwarded.

DR. SOPHIA J. KLEEGMAN, in the discussion:

There is as much human suffering, illness and death as the result of destructive human relations as can be wrought by any virus or germ. In my practice I try to see the couple two or three times before marriage, if the interval will allow, and once after marriage. One session is devoted to the woman and one to the man. If the hymen needs dilation, I prefer stretching to cutting. A cotton pledget soaked in 35 per cent cocaine solution applied to the hymen is followed by the introduction of graduated cone-shaped dilators made of a plastic material. Contraceptive advice is the most common request at the start of most marriages. A good book is a helpful supplement to the personal interview; it alone can meet the particular needs and fears, which differ with each couple. I find that the two sexes are equally in need and equally grateful for this phase of instruction.

FAILING TO RESPOND TO LIVER OR IRON THERAPY

(C. A. Doan, Columbus, in *Jl. Mo. State Med. Assn.*, Dec.)

Many, if not most, of the anemic states dependent upon defective blood formation or blood destruction are now recognized and may be treated rationally. Those anemias secondary to direct marrow damage or marrow-cell displacements and, therefore, failing to respond to the usual therapeutic measures, are less obvious and the constitutional signs and symptoms by which they may be identified further are not so well known. Careful qualitative studies of the blood cells are far more significant than any quantitative data in arriving at a differential diagnosis, and sternal aspiration of marrow cells, and proper identification of changes in these cells should establish the identity of any doubtful syndromes.

Twelve cases of multiple sclerosis showed no response to intensive vitamin E therapy. Of 14 cases of progressive muscular atrophy treated with vitamin E, 3 apparently recovered, 7 improved greatly and 4 were not benefited. Dosage of 100 mgm. daily of alpha-tocopherol in the muscle, for 8 wks. or 150 to 200 mgm. by mouth.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

TRANSURETHRAL PROSTATECTOMY

With the present technique of transurethral resection, for which the world is indebted to Dr. Maximilian Stern, and with the recently improved instruments and follow-up, practically all prostatic obstructions can be removed without any great difficulty. It is only the exceptional case that will require anything other than a transurethral resection.

A careful study and an accurate diagnosis in every case is essential, as are preparatory treatment and proper planning in advance the operative procedure in detail as fitted to the individual case.

Naturally, since most of these patients are men of advanced age, there may be many other conditions present which vitally affect the patient generally and which have a direct bearing upon the outcome of an operation. In a case in which the outflow of urine which has been obstructed for a long period of time there may exist a thickened and badly involved bladder wall, diverticulae, chronically diseased ureters, pyonephritis with badly impaired kidney function. Most patients of this type exist on such narrow margin that the least thing may turn the balance against them.

In a patient of this type a resection might give temporary relief, but the patient could not live long because of the increasing destruction of kidney capacity no matter what treatment is given. It is such cases, even if the prostatic obstruction is entirely removed the condition would progress rapidly until the patient succumbed to toxemia, infection and uremia. Surgery in such cases would only bring this operation into disrepute.

This reminds that it is vitally important to make an early diagnosis in prostatic hypertrophy in order that the condition may be relieved before it has gone on to the point where the patient can not recover no matter what is done.

It is in the early or moderately advanced cases of prostatic disease that the finest results are obtained by resection. The more serious the involvement and the greater the impairment of renal function, the less hope there is of obtaining a good result.

Transurethral prostatic resection should only be done by those who are skilled in the manipulation of the resectoscope and have the technical knowledge and ability to orient themselves with reference to the prostatic tissue that is to be resected.

This operation requires the most meticulous care to detail. Only those skilled in the handling of instruments of this kind should attempt the operation at all.

Before operation examination should include the making of x-ray pictures of the entire genito-urinary tract. This will often disclose stones or other conditions which may require even more careful investigation. The patient must be prepared in such a way that he will have the maximum endurance to undergo the operation and resist infection.

Since many of these patients have an avitaminosis, this should be carefully looked into, and any patient who needed vitamines should be supplied. Many of these patients are anemic and blood transfusions are usually in order, often life saving —both before and after operation.

For any patients who are not accustomed to drinking enough water, glucose intravenously is helpful.

Occasionally suprapubic drainage is necessary, in a certain percentage of cases a continuous catheter drain. Continuous drainage by urethral catheter tends to set up a cystitis, an agglutination of the prostatic inflammation and a urethritis difficult to control, and it may lay the foundation for infection following resection.

Every means should be exhausted to build the patient up to maximum strength and health before undergoing an operation of this kind.

The operation is usually done in one stage, but sometimes two stages are necessary. Most of our resections have been done under spinal anesthesia because we feel that this offers the patient the best anesthesia with the least possible body disturbance and no after effects.

After a resection is done, continuous drainage is usually instituted, and this is kept up until the urine is clear. There is a tendency to shorten the period of continuous catheter drainage after operations, as this prevents accumulation of urine in the bladder and makes easy frequent irrigation, particularly indicated during the first few hours after operation.

After operation every possible means is used to keep patient's strength up and to assist him in making rapid recovery. Again, blood transfusions are often helpful; also glucose intravenously.

The results of resection, as a rule, are good. An occasional case will not do well. Some of those who have passed the borderline may perish. But in the vast majority of cases resection will lead to an end result and will be highly satisfactory to the patient.

The public has been misinformed that the operation is a minor operation. The resection of a prostate gland is a major operation which requires the highest technical skill and a thorough knowl-

edge of the principles of urologic surgery. The management of prostatic patients during the course of preparation for operation, the operation and the postoperative and convalescent periods is all vitally important in the effort of the surgeon to remove the trouble and to enable the patient to make a good recovery.

After every possible care and the most skillful resection the results may be disappointing to patient and surgeon; but it has been our experience that the vast majority of these operations give good results.

Hospitalization should in many cases be somewhat longer than has been the custom—probably ten to fifteen days in many cases is not too long. Some, of course, can return home in a much shorter time.

One thing that was probably neglected in the early years of transurethral prostatic resection was specific instructions to the patient regarding post-hospital care. We have found that a folder which is given to patients as they leave the hospital, or the day before, giving exact instructions about what the patient should and should not do and advice about other things, is of great importance and will save the patient much worry and the doctor a lot of trouble.

The following is a copy of the instructions which we give our patients who have had resection:

DAVIS HOSPITAL
Statesville, N. C.

CARE AFTER PROSTATIC RESECTION

After a transurethral operation upon the prostate gland, it is important that you take proper care of yourself for a long time after you return home. Unless you do so, the results may not be quite so satisfactory as they would be if you carried out these instructions.

Patients sometimes return home with the idea that they can do as they please, eat everything they wish, go about freely and take long automobile rides, all of which is erroneous. You should plan for several weeks to several months of quiet, peaceful living, depending upon the advice given you by the doctor. Some patients will require more prolonged rest than others, depending upon the condition found at operation.

For the first six weeks, it is especially important that you take extremely good care of yourself, and even after that you should be careful. During this time, internal healing is taking place, and the bladder irritation usually becomes less, and the frequency decreases. Remember that to get the best result from real rest, you should undress and get in bed and actually rest, both for a while during the morning and in the afternoon. At first, you should rest an hour or more during the forenoon and at least two hours during the afternoon in bed. At night, you should sleep in a room that is comfortable, not too warm—not too cold, and in a good, comfortable bed. Remember that rest is an important part of your treatment after you leave the hospital.

It is well to remember that moderation in everything should be your guide, and especially as to exercise, straining or lifting or anything of that kind. An unusual strain might tend to cause bleeding into the bladder.

The following are some of the precautions that it is important to keep in mind:

1. Drink plenty of water. This keeps the kidneys and bladder flushed out and aids in the healing process. Do not drink too much water at any one time, but remember to keep drinking water all during the day, and in this way you will drink a large quantity, which will be a great help in the healing process.

2. Never use any drink containing alcohol—no beer, no wine, no liquor. Instead, drink good, pure water, orange juice, lemonade, buttermilk and the various fruit juices that agree with you. While it is permissible to drink a little tea or coffee, it is better to leave these off. Avoid fountain drinks of all kinds, except fruit juices, such as orange juice and the other fruit juices that are permissible.

3. Keep the bowels regular. This is important. Should it be necessary for you to strain at stool, there is danger of this causing bleeding into the bladder. In fact, any straining or lifting is not good for you. One of the greatest causes of trouble after operation upon the prostate gland is constipation. It is sometimes necessary for a patient, in addition to taking laxatives, to use enemas to remove the impacted fecal matter from the lower bowel. In the rectum, the impacted fecal material may press against the prostatic area and cause pain, retention of urine and distress generally, if it is not removed. You can avoid this trouble by keeping the bowels regular. Mineral oil is helpful and may be taken twice daily, but remember that this is not a purgative, not even a laxative, merely a lubricant, and it may be necessary for you to take some laxative in addition to this. If in doubt what to do, ask your doctor.

4. Do not overeat. Of course, you should eat a moderate amount of plain, wholesome food, but avoid greasy foods such as highly seasoned meats, sausage, pork chops, spare ribs and things of that kind. *Try to eat foods which agree with you and always avoid foods which are likely to upset you.* Vegetables, cereals, milk, especially buttermilk, eggs, and whole wheat bread are all right. "Enriched flour" is available. This flour contains cer-

tain vitamines which have been added, and you should eat bread made from this flour, in preference to the ordinary flour. Liver may be eaten twice weekly for its blood-building effect. If there is no irritation of the bladder, it will be all right to eat a little fish or chicken.

5. Avoid straining or overexertion. Do not take long automobile rides. Never ride horseback. Don't lift heavy things. In fact, you should lead a very quiet existence for at least six weeks after operation, and it is better to keep quiet even longer.

6. Avoid getting chilled or overheated. Both are bad for you.

7. Sometimes there will be a little blood in the urine. When this occurs, you should go to bed immediately and avoid straining and lifting. It would be well to call your doctor and let him see you. Meantime, go on a liquid diet and the chances are that this will clear up in a day or so, especially if you remain quietly in bed. A little bleeding is not unusual and should not alarm or frighten you. However, if it becomes severe and there is considerable blood in the urine, or blood clots, causing pain, you should return to the hospital for local treatment which will relieve this. Remember though, not to get frightened or alarmed if there is a little bleeding.

You will often notice shreds in the urine for a long time, possibly for as long as several months. Also, during this time, you may have occasional flakes of blood or possibly little spots of blood in the urine. This does not mean there is anything wrong, but it is usual in the natural process of healing. However, if the bleeding becomes excessive or if it persists very long, it would be well to consult your home doctor, and he will advise you what to do about this.

Remember that the success of the operation depends, to a great extent, on the care you take of yourself *after* you return home. No matter how well the operation is performed or how well you are treated in the hospital, you must do your part toward taking good care of yourself after you return home. This is necessary, in order to secure a good result.

Once in a long while, a patient will become suddenly unable to void. The bladder will fill up with urine and there will be considerable pain until this is relieved. In case anything of this kind should occur, the proper thing to do is to call your home doctor immediately and ask him to catheterize you, if necessary. Usually this is all that is necessary, and in a few hours you will probably be able to void freely and have no further trouble.

There may be certain treatments that you should take on returning home. Be sure that you understand what you are to do and what medicine you are to take. By asking the doctor before leaving the hospital what treatment to take, he will advise you correctly about it and will be glad to explain to you anything about which you may be in doubt.

The impression has gone out that this operation is a minor operation. As a matter of fact, it is a most important operation and, while it is possible to get out of bed in a short while, it is safer for many patients to remain in bed eight to ten days, or even longer in some cases, on returning home.

There will often be a burning sensation in the bladder region on voiding. Sometimes there is pain just after emptying the bladder. This is not unusual, but will gradually subside after a while.

At first you may void frequently during the day and several times during the night. As the internal healing progresses, this becomes less frequent. Don't be alarmed about this. Just keep up the general treatment as advised and you will improve.

Watch your weight. If you gain or lose too much, see your doctor *at once.*

Avoid coffee and tea, if possible. At any rate, be moderate in the use of these.

It is better not to use tobacco in any form.

In some cases a special diet may be necessary, especially for patients who have diabetes. In these cases it is important to follow the diet given you, *and follow it strictly every day.*

You should return to the hospital at regular intervals for an examination. Some patients should come more often than others. Before you leave the hospital, ask your doctor how often you should return for recheck or for any treatment that might be advisable.

If there is anything about which you are in doubt, be sure to ask the doctor before you leave the hospital. If you have any trouble of any kind after you return home, get in touch with your home doctor and he will advise you, or return to the hospital immediately if your home doctor is not available.

Those who follow the directions carefully will have the best possible chance of making a good recovery. You should read this over and over again until you are thoroughly familiar with the instructions.

Oxygen Therapy.—Regardless of the method employed, ultimate success of treatment with oxygen depends on its early use. The reserve supply of oxygen within the body is capable of maintaining life for only a few minutes. Once this supply is exhausted, irreparable damage to the central nervous system will occur within a comparatively short time. Delay in instituting artificial respiration or in administering oxygen may result in death or in the production of a deranged mind within a sound body.—Torell, *et al,* in *Jl. A. M. A.*

DEPARTMENTS

INSURANCE MEDICINE

EDITOR'S NOTE.—

The following article by Dr. Norman R. Blatherwick, Director of the Biochemical Laboratory of the Metropolitan Life Insurance Company, describes simple methods for the quantitative determination of albumin and sugar in the urine which were developed in the Metropolitan Laboratory and may be used to advantage in the office, clinic or hospital laboratory. The methods are used routinely in the laboratories of many life insurance companies. In our own laboratory they have proved to be highly satisfactory routine tests for many years.

H. F. STARR, M.D., Editor
Department of Insurance Medicine.

—Dec. 22nd, 1941

THE DETERMINATION OF ALBUMIN AND SUGAR IN URINE

For this issue N. R. BLATHERWICK, Ph.D.
From the Biochemical Laboratory, Metropolitan Life Insurance Company, New York

THE accurate determination of urinary constituents presupposes that the specimen is either freshly voided or that a suitable preservative for urine is used. The specimen should be clarified by filtering or by centrifuging it, especially before the albumin is determined.

METHODS FOR ALBUMIN

The most commonly used tests for albumin probably are the nitric acid ring test and the heat and acetic acid test. These procedures give results in the hands of trained workers that may be considered semi-quantitative in nature. The readings are recorded in such terms as "faintest possible trace," "faint trace," etc., or "1 plus," "2 plus," etc. While the results obtained in one laboratory by different persons may be strictly comparable, those of another laboratory, while comparable therein, may not agree with the interpretations of the first. The test described below has the great advantage of giving quantitative readings which can be universally accepted. This determination and that of sugar subsequently described are widely used in the laboratories of the life insurance companies.

The Kingsbury-Clark Method for Albumin.— This method developed in the Biochemical Laboratory of the Metropolitan Life Insurance Company, is based on the precipitation of albumin and other proteins by sulfosalicylic acid. The test is easily performed as follows: Pipette 2.5 c.c. of clarified urine into a test tube graduated at 10 c.c. and then add 3 per cent sulfosalicylic acid solution (30 grams dissolved and diluted to 1 liter with distilled water) to the 10-c.c. mark. Invert the tube to mix, allow to stand 10 minutes, and then compare the turbididty with the permanent turbidity standards. Record the value of the standard most closely matched as the albumin content of the urine. Seven standards equivalent to 10, 20, 30, 40, 50, 75 and 100 milligrams of albumin per 100 c.c. of urine are used. In case the specimen contains more than 100 mg. albumin, it may be quantitatively diluted and redetermined. Multiplying the value obtained by the number of times the specimen has been diluted gives the desired result. The method is described in detail in the original paper by Kingsbury, Clark, Williams and Post.[2] The matching of the unknown with the standards may be made either by daylight or by using the Clark lamp. The lamp is essential when the laboratory is dark or when natural illumination is variable. The tubes containing the standards and those in which the tests are made must have the same internal diameter, wall thickness and color. This albumin outfit is shown in Figure I. A value of 50 mg. of albumin per 100 c.c. of urine obtained by this method is about equivalent to what is usually designated as a trace when Heller's or the heat and acetic acid test are used.

A simpler outfit designed for the physician's use is illustrated in Figure II.

Many times it is not necessary to know how much albumin is present but only whether there is more or less than a given quantity. In such cases, one may use a portable outfit containing one standard equivalent to 50 mg. of albumin per 100 c.c. This kit has been used by our Visiting Nurse Service for the past 10 years. It is shown in Figure III.

The sulfosalicylic acid used in this test can also be obtained in the form of dry pellets. These are added directly to the specimen and one can tell whether there is more or less albumin present than is indicated by the standard tube. This vest-pocket outfit is illustrated in Figure IV.

The standards are referred to as being permanent but this is not literally true. After about nine months they tend to become lighter, especially in the lower range, and thus give results which are too high. The entire set of standards should be renewed every nine months.

METHODS FOR SUGAR

Most of the qualitative tests for sugar are based on the use of alkaline solutions of copper or bismuth salts. The most popular of the copper solutions is that of Benedict. The results obtained by using these are only qualitative. The picrate method which is described below has the advantage of giving qualitative and quantitative results at one operation.

The Benedict Picrate Method for Sugar.—Alkaline picrate solutions containing sugar when boiled produce a brownish-red color similar to that given by creatinine. This color is compared with permanent standards representing definite quantities of glucose. The color due to creatinine is dispelled by the addition of acetone. The standards are made by mixing acid solutions of ferric chloride and cobalt chloride. The method is described in detail in *Practical Physiological Chemistry* by Hawk and Bergeim.[2]

The procedure follows: Transfer 1 c.c. of urine to a test tube graduated at 25 c.c. Add 3 c.c. of picric acid solution (2 grams of pure, dry picric acid per liter) and 0.5 c.c. of 5 per cent NaOH solution. Then add 5 drops of 50 per cent acetone (prepared fresh each day by diluting acetone with an equal volume of distilled water) and place the tube promptly in a boiling water-bath. At the end of 12 minutes remove the tube, cool it and dilute the contents to 25 c.c. Compare this colored solution with the permanent standards in tubes of the same internal diameter, recording the value of the standard most closely matched as that of the sugar content of the specimen. Five standards representing 0.1, 0.2, 0.3, 0.4 and 0.5 per cent glucose are used. If the urine contains more than 0.5 per cent sugar, it is diluted and the whole test is repeated. The value of the standard most closely matched multiplied by the number of times the urine has been diluted gives the desired value. The sugar rack and standards are illustrated in Figure V.

It must be remembered that when the picrate method is used some color is always produced chiefly due to the so-called normal urine sugar. Values up to 0.3 per cent are considered normal if the specific gravity of the urine is 1.025 or higher, and providing there is no history of diabetes mellitus.

Experience With the Methods

Our Home Office employees are given a physical examination, including urinalysis, prior to employment and yearly thereafter. This group, now numbering about 15,000, may be considered to represent an average cross section of the general population. The results obtained during a period of 16 years indicate what may be expected when these methods are used.

Ninety-one and six-tenths per cent of the urines gave negative values for albumin; 3.3 per cent contained 10 mg., and 1.7 per cent had 20 mg. per 100 c.c.; 96.6 per cent of all specimens contained 20 mg., or less, per 100 c.c. of urine; 59.7 per cent of all specimens showed less than 0.1 per cent of sugar, 16.0 per cent contained 0.1 per cent, 14.4 per cent had 0.2 minus per cent, and 4.8 per cent indicated 0.2 per cent sugar; 94.9 per cent of all the urines examined contained 0.2 per cent or less sugar.

Summary

The Kingsbury-Clark method for the determination of albumin and the Benedict picrate method for the estimation of sugar in urine are briefly described. Representative values for albumin and sugar obtained from a large group of persons are recorded.

Bibliography

1. Kingsbury, Clark, Williams and Post: *J. Lab. Clin. Med.*, 1926, XI, 981. See also Hawk and Bergeim: *Practical Physiological Chemistry*, Philadelphia, 1937, 745, Eleventh Edition.
2. Hawk and Bergeim: *Practical Physiological Chemistry*, Philadelphia, 1937, 741, Eleventh Edition.

*Standards, tubes and other supplies may be obtained from R. P. Cargille, 118 Liberty Street, New York, The Fales Chemical Company, Cornwall Landing, N. Y., and Standard Reagents Company, Philadelphia.

HUMAN BEHAVIOUR

James K. Hall, M. D., *Editor*, Richmond, Va.

BEVERAGE ALCOHOL AND WAR

The *New York Journal of Commerce* states that the alcoholic beverage industry provides a medium for the collection in the United States each year of more than one billion dollars in taxes. That is more money than I can conceive of.

And the same publication expresses the opinion that there will be no conflict between the production of alcoholic beverages and the food and munition needs during the period of the present world-wide war. I doubt if such a statement is or can be true. That doubt arises out of the basic fact that alcoholic beverages are not necessities, in peace or in war. Though the citizen may have the legal right to waste his own substance in peace time, and to waste the voluntary labours of others, too; no citizen should have the right, or be permitted to assume that he has the right, to waste his own money or the money or the labours of his fellow-citizens, while his country's safety is endangered by war.

I know of no reason for believing that alcoholic beverages are necessities at any time. I am inclined to believe that the use of alcoholic beverages always subtracts from the individual's assets. Their use tends to impair judgment, to lessen efficiency, to lower the moral tone, and to bring about deterioration of body and of mind. In order that he may even seem to be civilized, man must be constantly and unremittingly inhibiting the eruption of many aggressive instinctive urges. One of the prompt and obvious physiological and psychological effects

of imbibed alcohol is to lessen inhibition. Prudence and discretion and even a mild degree of alcoholic intoxication are incompatible. Rum and repression have no kinship.

I suppose the alcoholic beverages, most of them, to be made from fruit or from grain that may be used by man or by useful animals as food. During a great and protracted war such foods become scarce. The ultimate conqueror of the army that surrendered has generally been starvation. A well-fed army is not easily overrun. A starving or an intoxicated army is difficult to command but easy to subdue.

The use of alcoholic beverages is probably as potent a factor in the cause of venereal diseases as the germ of gonorrhea and the parasite that produces syphilis. Uncontrolled lust is a common manifestation of alcoholism. Alcoholic intoxication, even in the milder stages, and careful worship of Venus are improbable.

The total effect of the use of alcoholic beverages upon man must be all but inconceivably ramifying in lessening resistance and in doing actual hurt to the physical structure. The employer is likely to ask the applicant for work: Do you drink? The well-evoked medical history always contains an important paragraph about the patient and alcohol. The paragraph may be all the more significant because of its lack in truthfulness. The surgeon's mechanisms and the patient's alcoholism are never congenial.

If the Journal's statement that a billion dollars in taxes are collected in the United States each year through the sale of alcoholic beverages is true, I wonder if the Journal has any idea how many dollars those billion dollars cost the people of our country? How much do the people have to pay for their drinks each year in toto in order that a billion dollars may roll, one by one, into the public treasuries? Many billions of dollars, I should surmise.

But there are other costs. Those other costs are so varied, so enormous, so complex, so far-reaching, so lasting, even into future generations, that no accountants, however highly certified, can possibly compute them. Those costs are inestimable.

In my boyhood days I heard a periodic alcoholic, a brilliant man, remark that no human being could have anything to do with beverage alcohol without being tarnished by it. Its use had humiliated and had hurt him, but it was never able to deprive him of his innate honesty.

The government that is engaging in the sale of alcoholic beverages for commercial reasons and in a great war at the same time is dreadfully handicapped. The production and the distribution and the sale to its citizens of alcoholic drinks is both an unnecessary and a disreputable business, and the government engaging in those activities suffers in efficiency and in good repute.

UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

FORTY YEARS OF UROLOGY

RECENTLY the distinguished British urologist, Sir Hugh Lett, gave[1] an interesting and instructive sketch of the history of urology over the past forty years. A good deal of what Sir Hugh has so well said is here given, along with some observations of my own in my twenty-five years' acquaintance with this specialty of medicine and surgery.

The x-rays were discovered in 1895 and MacIntyre (1896) of Glasgow obtained the first positive radiogram of a renal calculus.

Tuffier (1897) loaded a ureteral catheter with a metal stylet, passed it up to the pelvis of the kidney and then had an x-ray examination made. There was little progress until Fenwick (1905) introduced a bougie opaque to the x-rays and the principle was soon applied to ureteral catheters. The introduction of catheter pyelography in 1907 led to a still greater accuracy which reached a very high standard when intravenous pyelography was generally adopted.

The first deliberate operation for uncomplicated renal calculus was performed by Henry Morris in 1880. It was not until 1910 that the abdominal extraperitoneal route, through an incision parallel to and above Poupart's ligament, was found to be practical.

In early catheter pyelography collargol was employed. Its use sometimes led to a fatal issue in certain cases in which the pelvis was over-distended and calices ruptured. Substituting an innocuous solution of sodium bromide or iodide proved satisfactory. The brilliant discovery of intravenous pyelography in 1929 was a great advance.

Forty years ago, cases of hematuria and renal pain which could not be explained were described as symptomless hematuria and nephralgia—terms which have largely ceased to exist.

"Remember the other kidney." Many years ago, Harold Barnard concluded a lecture on nephrectomy with these words. Then we had none of the tests for renal efficiency that are now used, radiology was in its infancy, pyelography was unknown, and death from uremia was a very real risk. In some cases, the only kidney the patient possessed has been removed.

1. Proceedings Royal Society of Medicine (England), August, 1941.

In testing for renal efficiency in 1897, methylene blue proved slow and unreliable, and was superseded by indigo-carmine some six years later. Its excretion and the simplicity of the test make it particularly useful when nephrectomy has to be performed in an emergency. Phenosulfonephthalein, introduced in 1910, has found favor in the United States, but it has not been employed extensively in this country (England).

An important advance along fresh lines was made in 1920. The urea concentration test, in combination with the estimation of the blood urea, is of great importance in prognosis, particularly when prostatectomy is under consideration.

Of "catheter life," Sir Hugh tells us that many who possessed average intelligence and submitted to the necessary discipline lived on in good health and comfort. Sir Buckston Browne, says he, had two patients who lived to be a hundred; the last twenty years of their lives they passed all their urine by catheter. In common with other urinary surgeons, Sir Hugh has performed prostatectomy upon patients who had led a catheter life for many years, and found the urine clear and free from pus. But, on the other hand, it is very irksome for the patient to find himself dependent on a catheter and to have to perform the ritual every six hours. The prevention of infection calls for very careful supervision by his doctor in the early days, and strict obedience on the part of the patient to the instructions given to him.

There were, however, some cases in which catheter life was unsuitable or even impossible. The urethra might be a difficult one and the passage of the catheter far from easy. Some patients were clumsy with his fingers or very short-sighted. Stone might be a complication, or possibly carcinoma or papilloma of the bladder. In some cases the prostate was vascular and bled readily; in others the patient had attacks of severe intravesical hemorrhage.

In 1893, White tentatively suggested castration as a possible cure for the enlarged prostate; in 1896 Cabot reviewed 203 cases; 39 patients had died shortly after the operation, real successes were few, and serious mental disturbance was not uncommon.

Suprapubic prostatectomy was first performed by Belfield in the United States and McGill in this country, but it was not widely practiced until after 1901. In that year, Freyer started his campaign and, by repeated publication of his results, made suprapubic prostatectomy the standard surgical treatment of the enlarged prostate in this country. Little was done to prepare the patient for the operation, and not uncommonly prostatectomy was performed during an attack of acute retention.

At a meeting of the American Surgical Association in 1909, Stillman drew attention to preliminary drainage of the bladder. A number of surgeons began to practice the two-stage operation. In 1917, Pilcher emphasized the importance of emptying the bladder by slow degrees, either by catheter or a suprapubic tube. This was quickly accepted and put into general practice. Preliminary ligature of the vas on either side when performed accurately eliminates the possibility of epididymitis.

Resection by diatheramy in skilled hands has proved particularly useful when the prostate is small or when the obstruction is caused by a middle lobe. But in this country suprapubic prostatectomy remains the operation of choice when the gland is much enlarged.

It was not until 1898 that the cold lamp was discovered. Great care had to be taken to prevent a burn and the subsequent ulceration of the bladder which would occur if the lamp of the cystoscope were allowed to remain in contact with the bladder wall for any length of time. The advent of the irrigating cystoscope was a great boon, for until then the bladder had to be washed out through a catheter. This often meant the repeated withdrawal and reinsertion of the cystoscope, particularly in cases of hemorrhage or when turbid urine was desecending from one or both kidneys. The double catheterizing cystoscope, the operating cystoscope, and finally the combined cystoscope and posterior urethroscope were greater achievements.

One of the greatest triumphs in the history of bladder surgery was the destruction of vesical palillomata by diathermy in 1910.

Coffey's work on the transplantation of the ureters into the pelvic colon relieved wonderfully the distress associated with the final stages of carcinoma of the bladder.

The last forty years have brought a remarkable reduction in the number of patients who present themselves with strictures of the urethra. Records of the London Hospital for 1897 show that fifty cases of stricture were operated upon. In 1937 there were only four. In the former year, there were nineteen cases of perineal abscess and six of extravasation, in the latter there was one solitary case of perineal abscess.

It was only when the urethroscope was modified by Wyndham-Powell to allow air-distention that it became of real value.

Although forty years ago the principles of antisepsis and asepsis were generally accepted, they were not always strictly observed where the bladder and urethra were concerned. Catheters and bougies were kept in a wooden box, and often

enough the only preparation they had before use was a brief bath in a solution of boric acid.

The senior surgeon for whom he dressed, the author tells us, astonishingly, was accompanied on his visits to the wards by an attendant who carried in front of him, suspended by a strap round his neck, an assortment of instruments on a wooden tray covered by green baize. Among those instruments were steel dilators, and they were picked up and passed into the bladder without any form of antiseptic preparation. Boric acid was the only drug in use as a urinary antiseptic, so it is not surprising that urinary fever and cystitis should have been rife.

When we look back on those days and the scanty regard that was paid to surgical cleanliness, we find a ready explanation for the cases of perineal abscess and extravasation of urine and cellulitis that so frequently occurred.

Doubtless all of us wonder at the kind words said for the "catheter life." It would seem that such a life was not nearly the terrible state of existence, for all those compelled to adopt it, that we have been taught to regard it.

As was inevitable, Sir Hugh makes no mention of a good many of our own urologists whom we would have expected to see named. But, then, had the review been made by our own, a good many of those in Sir Hugh's list would probably have not been given credit.

In all, it is an inspiring story of marvelous achievement of which medicine and surgery the world over may be proud.

THERAPEUTICS

J. F. Nash, M. D., *Editor*, Saint Pauls, N. C.

MANAGEMENT OF DIABETIC PATIENTS

We family doctors can take excellent care of the health of the great majority of our diabetic patients and have them die of old age or some disease unrelated to diabetes. There's nothing difficult or complicated about the process. The principal requirements are knowledge of a few fundamental facts, one of the most important of these being the fact that fixed habits should not be interfered with unless we know them to be harmful.

The article[1] which brought this subject to mind is based on knowledge of the disease, diabetes, and of the human beings who have the disease.

Our first objective in the management of diabetic patients is not keeping urine sugar-free and blood sugar at 0.1 per cent, but the maintenance of sufficient nourishment. The usual standard is from 10 to 20 calories per pound of weight. The physician must consider the age, occupation and temperament of the patient; also if the weight of the patient is much under or over his usual normal. Many thin persons have to eat much more than the heavy in order to maintain their usual weight. A basal metabolic rate estimation is of value in many of these cases.

Our second objective is simplification of the character of the diet, which varies with age and weight and also with the presence of various disease conditions.

The average diet of a normal man weighing 154 pounds, doing physical work, is 400 Gm. of carbohydrate, 100 of protein and 100 of fat, making a total of 3000 calories. Thus, more than half of the normal or usual diet is sugar-producing food.

It has been found that about 1 Gm. of protein to 2.2 lbs. of weight is sufficient for most persons. This has to be increased in children and in surgical conditions where body repair or growth is taking place. A man weighing 150 pounds would be safe with from 70 to 80 Gm. of protein.

The fats in the diet should be used to maintain weight and are safe if they do not exceed the carbohydrate intake or, at most, do not exceed it greatly.

The carbohydrates in the normal diet usually exceed the fats and protein combined, so in the diabetic diet they should have as high a ratio as is compatible with normal blood sugar.

An individual in middle age has usually established certain habits of eating difficult to change for a long period of time, and still maintain his coöperation.

Since the advent of insulin, and especially of protamine-zinc insulin, a patient should, as far as possible, conform to his usual diet with, of course, limitation of concentrated carbohydrates, and no excess fats or protein, bringing up the volume with green vegetables or other things of low food content.

The breakfast and lunch, more or less standardized, should be written down, both as to character and approximate amounts, using easily-obtainable foods if possible. The dinner may require more instruction, but by using such terms as serving, portion and tablespoonful, specifying about the size of the serving of meat, and, in place of details in vegetables and fruits, specifying the group from which they may be taken, it will be much easier for the patient to carry out instructions and maintain proper nutrition.

The 5-per cent vegetables may usually be taken in any amount desired, because their food value is small, the amounts eaten are usually not large, and the absorption is very uncertain.

1. H. V. Gould, Chicago, in *Clin. Med.*, Dec.

Equivalents are helpful in satisfying the patient. Assuming that a slice of white bread (30 Gm.) contains 16 Gm. of carbohydrates, 3 of protein and no fat, some of the equivalents are: one small, cooked potato; ½ cup of baked beans; or 1/3 cup of canned corn. Thirty (30) grams of any of the ordinary breads have approximately the same constituents.

Our third objective is to make the use of insulin as convenient as possible.

Usually glycosuria occurs when the blood sugar is about 170 mg. per 100 c.c. of blood, but it is best to make a few blood sugar estimations and urine examinations of specimens taken at the same time.

If, on a diet that meets the requirements of the patient, glycosuria and hyperglycemia are present during most of the day, especially before breakfast, we should give insulin in sufficient amounts to control them.

With moderate diabetes in adults, especially after 40 years of age, a moderate or small dose of insulin protamate, given some time before breakfast, is sufficient to control the urinary sugar, except, perhaps, for short periods of glycosuria two or three times a day, especially after breakfast which may usually be disregarded. These periods of glycosuria are due to lack of sufficient physiologic insulin formed during the meal, which insufficiency is variable and hard to estimate. Protamine-zinc insuin has a relatively low but even curve, usually for at least 24 hours, and reactions may occur in the early morning. In these cases it is best for the patient to eat a little at bedtime. Reactions may occur also if there is diarrhea, vomiting, unusual exercise, or too long an interval between meals.

Ordinarily, if a patient maintains the weight that you think advisable, if he is satisfied with the amount and character of his diet, and if the urine is free from sugar before breakfast and usually at bedtime or before dinner, without much hyperglycemia, one may assume that the objectives of diabetic management have been accomplished.

GENERAL PRACTICE

James L. Hamner, M.D., *Editor*, Mannboro, Va.

AN UNORTHODOX BUT EFFECTIVE TREATMENT OF SCARLATINA

We of the South seldom encounter scarlatina in severe form; but we see enough of the disease and its sequelae to make us welcome any more promising treatment. The use of diphtheria antitoxin as the best treatment, or as of any value, in erysipelas, is new to us. The paper abstracted is based on large experience and appeals to us.

Many years of observation on hundreds of cases of scarlatina, with unsatisfactory clinical results attained by following classical or textbook treatment methods, have convinced me that the accepted views on scarlatina and its therapy are not trustworthy.

I believe that scarlatina is *due to a focal infection* caused by the Streptococcus haemolyticus. In the usual type, the focus is in the nasopharynx. Absorption of toxin from this focus causes the complications cervical adenitis, arthritis, nephritis.

Aiming to disinfect the local focus to prevent absorption of toxins, 10% argyrol solution is instilled in the nose t. i. d., with the patient lying on his back, until he expectorates it. Ephedrin jelly is employed to constrict the nasal passages and facilitate drainage. In many severe cases, nasal obstruction is marked, and purulent nasal discharge is profuse. In this type satisfactory results are obtained from streptococcus, staphylococcus and pneumococcus vaccines.

Secretions must be removed by hot throat irrigations every hour, p. r. n.; of Rx Sod. bicarb., Sod. chloride—a.a. dr. 1, Aquae—q.s. ad 1 ounce, plus an ice collar.

This treatment gives mortality rates of almost zero. Complications are absent or mild, and none required radical surgical intervention. Nephritis has seldom developed and has always been mild. In surgical scarlatina, I use local disinfection of the wound and scarlet fever antitoxin. For the ordinary pharyngeal type of scarlatina I abandoned scarlatina antitoxin after two years of trial. Before sulfanilamide was available, we had no deaths in 1200 cases (excluding five patients moribund on admission).

Sulfanilamide has proved of great value in severe scarlatina. In ordinary cases, we did not need it. As a prophylaxis for contacts, we have used sulfanilamide in the work of the Trenton Board of Health for two years. No persons have developed the disease from contact while using it. I advise 30 grains daily for an adult for five days.

In scarlet fever most deaths are due to preventable complications, dehydration, or non-recognized complicating disease, notably diphtheria. Exclude the latter by smear or culture from the nose and throat of every patient admitted. In some years we have found scarlatina and diphtheria coexisting in 5 to 20% of all cases. I believe that streptococcic sore throat and scarlatina are the same disease, except for the skin eruption. Streptococcic sore throat cases should be reported to the Board of Health just as scarlatina now is.

1. L. H. Rogers, Trenton, in *Jl. Med. Soc. N. J.*, Dec.

For many years we have used diphtheria antitoxin in the treatment of erysipelas. We give 1000 units every 12 hours intramuscularly until the eruption ceases spreading and the patient's condition improves. Rarely have we found it necessary to give a third dose. Our mortality from erysipelas is much lower than that reported from hospitals using other forms of treatment. We have tried them all but believe that diphtheria antitoxin is the best known treatment.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

EYE INJURIES IN HUNTING

ALTHOUGH the hunting season in this state is about one-third finished a warning of the danger to the eyes from indulging in this sport may not be amiss, and a few suggestions for simple measures for protection against such injuries may not yet be untimely. Annually, during this season, the writer has been called upon to treat several huntsmen who have received minor to severe injuries to an eye while hunting. These injuries, though not in the main serious, are usually extremely painful and temporarily disabling since most of them are of the cornea.

Usually any such injury is of sufficient degree, because of the pain it produces, to bring the hunt to an immediate conclusion for the person injured. Should he be remote from prompt medical care, say on a week-end hunt several hundred miles away, he may, by the time proper care can be administered, suffer severe consequences to the injured eye.

The back-lash of a twig or limb pushed aside by the hand or body of the huntsman in the van of the one following close to him, the latter usually receives flush upon the face. Passing through hedges or over ditches and small streams where briars are thick, the back-lash of one of these strikes the eye and inflicts injury. The writer treated such a case where a thorn from a briar penetrated the cornea and was broken off therein. Extraction of the foreign body was difficult. Also such agents cause multiple lacerations of the corneal substance and of the lids as well. An injury is recalled from walking directly into a dead sharp end of a small limb, whereby the globe was not injured because the huntsman's glasses deflected the point of the limb which penetrated the cheek below the rim of the glasses. Rushing into a thicket in an attempt to get a wounded bird or other small game any sharp object may wound the eye. Occasionally a stray shot may wound the globe; and, finally, the explosion of a gun barrel or an explosion through the breach of the gun may wound with large or small particles striking the globe.

Prevention.—Remain 10 or more feet behind a fellow huntsman if following him through wooded terrain, better still keep to the one or the other side of him. Exercise constant care and alertness for your own protection as well as for that of your fellow huntsman. If glasses are necessary to be worn for ordinary purposes, by all means wear them while hunting. If not, wear some simple lens in a frame during such activities. Either your own optical lenses or some other type of glasses will adequately protect the eye from 95 per cent of the injuries common to this type of sport. A stray shot, an explosive accident or a stout object which would severely wound or destroy the globe will be deflected or stopped by any ordinary lens without injury to the eye. Although the impact of the foreign body might be so great as to break or shatter the lens the eye will rarely be injured, whereas otherwise such type of accident would destroy it.

Persons with only one eye or with badly defective vision in one eye should meticulously observe these safeguards.

TUBERCULOSIS

J. DONNELLY, M. D., *Editor*, Charlotte, N. C.

THE FUTURE OF ANTI-TUBERCULOSIS WORK

THE RESULTS of the preventive work against tuberculosis during the past thirty years are evidenced by the great reduction in the death rate from the disease. Twenty years ago tuberculosis was first in the list of causes of death; today it is seventh in that list, a reduction of 70%. During the last ten years the reduction has been about 40%. Last year only 60,000 persons died from this disease, instead of the 250,000 which would have died had the rate of thirty years ago continued. This reduction during the past ten years has continued in spite of the injurious effect of the economic depression on the majority of us for a lengthy period. There has also been a great decrease in the number of primary infections among children, as evidenced by the results of mass tuberculin skin-testing in many communities. These reductions have been effected among the whites and among the Negroes, although the death rate in the latter race is still four times as high as among the whites.

In the December issue of *Diseases of the Chest*, Louis I. Dublin, Statistician of the Metropolitan Life Insurance Co., writes on "Tuberculosis in the

Next Decade." Dublin has observed continuously over a period of thirty years the millions of policyholders of this insurance company, and his statistics are authoritative. In 1911, the death rate from tuberculosis in this group was 224.6 per 100,000, while last year (1940) the rate was 44.3, a reduction of 80%. This group represents a good cross section of the population in the cities and towns of the country, and the whole country has profited by these good results. In one quarter of our States the death rate is under 30 per 100,000, which means that among 15,000,000 of the population of the country tuberculosis is already a minor cause of death. In eight States, the tuberculosis death rate among the whites is 20 or less. In 28 States the tuberculosis death rate was 35, or less, per 100,000. The first five months of the present year have shown further improvement, and the author predicts that the rate for the country as a whole in 1941 will be under 45.

The author's statistics further indicate that the 20,000,000 people in the better economic circumstances in the United States who carry ordinary life policies are now comparatively free from tuberculosis. Among the policyholders of this class in his own company, the death rate is under 25 per 100,000. We consider this record very encouraging as the policyholders of this type have a larger concentration of men at the ages of highest tuberculosis mortality. He says that in the insurance business tuberculosis is no longer considered a major problem among ordinary life policyholders, and, hence, he looks forward with great confidence to what may be accomplished in this work in the next ten to twenty years.

The author, however, cautions against any overconfidence which might cause a let-up in further prosecution of preventive measures. In different parts of the United States tuberculosis is very prevalent among Negroes, Mexicans, Indians, and, to a somewhat lesser degree, among Orientals. Negroes are the most important of these groups, since they comprise about 10% of the total population, and it is this race which today furnishes the chief source of infection from the disease. The author states that we shall never eliminate tuberculosis until we take more seriously considered steps toward eradicating tuberculosis among these 13,000,000 of our population. Although the death rate in this race for the country as a whole is 3½ to 4 times that of the whites, in some of the larger cities it is 11 times as high. In Milwaukee, the white rate is 40, while the Negro rate is 485. In San Antonio the rate among Mexicans is 300—more than double the rate among Negroes, and nearly seven times that among the Texan whites.

The writer further calls attention to the fact that for workers exposed to silica duct, the death rate for tuberculosis is six to more than ten times that among workers in non-hazardous occupations. The most hazardous of these dusty occupations are underground metal mining, granite cutting, metal chipping, tunnel drilling, sand blasting, anthracite coal mining and working in asbestos plants. The number of workers in these occupations total not less than a half million men. It is within these groups that greater effort in preventive measures must be expended. The methods for solution of the problem have been already worked out, and we have the knowledge and the experience that has taught us what measures are most effective, and what facilities are most needed for the purpose of further limiting the disease. The author laments the fact that only 13% of patients with pulmonary tuberculosis are admitted to sanatoria in the minimal stage, which emphasizes the necessity for earlier diagnosis in affected patients. The author also stresses the importance of rehabilitation programs for patients discharged as arrested. The reduction of the number of cases compelled to return to sanatoria for further treatment will effect a material saving in the expenditure of public funds.

Dr. Dublin concludes with some prognostications concerning the future effects of the anti-tuberculosis campaign. He says that if tuberculosis workers continue to take their job seriously there seems no reason to doubt that there will be as great a proportionate saving in the next decade as in the last, because of the fact that the anti-tuberculosis forces are increasing day by day; and that by 1950 the tuberculosis death rate should not be above 25 per 100,000, and the positive reactors to tuberculin among the general population should be not more than 10 to 15%, as against 25% at the present time. However, there are certain new factors which must be taken into consideration and the dangers from them carefully guarded against; *i.e.*, the induction of large numbers of young men into the army, and the consequent rigors of military service; and the increased activity of many more young men and young women in industrial plants. By means of the greater knowledge obtained in the last few years concerning the cause and prevention of industrial diseases, many of the misfortunes which happened to industrial workers during the last war should be avoided.

RELIEF IN ASTHMATIC ATTACKS

....(A. J. Brier, Topeka, in *J. Kansas Med. Soc.*, Dec., 1941)

Iodine retains its high place.

Ephedrine in recent years has proven its worth beyond all doubt.

In epinephrine we have a therapeutic weapon which has saved lives and added immeasurably to human comfort. In case of anaphylactic shock, it has not been fearlessly

enough employed. Here the exhibition of this drug must be heroic in proportion to the state which is met. It is rarely the over-use, but rather the under-use of adrenalin by all routes, that is a factor in the fortunately infrequent fatal outcome.

The depressant effect of the opium series upon the respiratory system via the central nervous system, and the contraction effect upon the bronchiolar musculature is case enough against morphine.

In ordinary doses the effect of atropine on the bronchial mucous membrane and constriction is negligible. Drying of the mucous membranes might well be deleterious. The extreme toxicity of the drug in effective doses condemns it.

One of the newer departures in the treatment of asthma is the use of helium gas. Its value in this field depends upon its lightness and safety of handling. When there is obstruction to the respiro-tubular system, in humans who breathe through narrow orifices a reduction of as high as 50 per cent was found in the pressure of a helium-oxygen atmosphere as compared to air. The value of this gas is not only in asthma, but in inflammatory swelling of the larynx and trachea due to infection, foreign body or instrumentation.

The rational therapy must be preceded by a study to ascertain the etiologic factors.

A mode of treatment of considerable benefit is the rectal instillation of equal parts ether and oil, the ether one ounce to 20 pounds of body weight. Two or three ounces may be given q. 15 or 20 min. The patient passes into a fairly profound state of anesthesia and awakens relaxed.

Avertin has been highly recommended for persistent asthmatic states.

Aminophylline has been injected intravenously during an attack and the subjective relief afforded. The medication was used in asthmatics who were refractory to epinephrine.

Theophylline with ethylenediamine have given good results.

HISTORIC MEDICINE

BLOOD TRANSFUSION HISTORICALLY CONSIDERED

E. L. Cooper, Melbourne, in *Australia & New Zealand Jl. of Surg.*, October, 1941.

In the early days of medical practice the epileptic, the senile and the insane were given blood to drink or in some circumstances it was rubbed into the skin. Possibly the first transfusion was that given to Aeson, the aged father of Jason. Medea the enchantress married Jason while he was searching for the Golden Fleece. Medea made a brew containing blood which was infused into the veins of Aeson's neck, whereupon Aeson became "as a young man" (Ovid, *Metamorphoses*).

In 1490 Pope Innocent VIII was suffering from chronic nephritis terminating in uraemic coma. Blood is stated to have been collected from three boys, aged ten years: each of these received a ducat for his blood. All three donors died before they could spend their money. Most probably the patient drank a mixture containing blood and stimulants. One historian states that the Pope died immediately afterwards in coma; others insist he lived for two years.

Andreas Libavius, a chemist, in 1615, and Robert des Gabets, a monk of Cluny, in 1563, wrote descriptions of the procedure then evolved to transfer blood from one individual to another. Probably none of these ever wielded a scalpel.

In England, William Harvey in 1628 published his discovery of the circulation. Christopher Wren and Robert Boyle in 1657 instilled wine into the veins of a dog till the animal howled and staggered about, and then lapsed into alcoholic coma. An ounce of liquid extrat of opium injected into the veins of a mastiff produced sleep lasting two days and two nights. "Afterwards the dog became fat." However, when opium was injected into cats they became mad.

The first successful transfusion of blood from one animal to another was performed by Richard Lower at Gresham College, Oxford, in 1665, by joining the vertebral artery of one animal to the jugular vein of another.

Philosophers and scientists at this period regarded the blood as carrying the vital humours: discussion raged as to whether the nature of the dog would be changed and if the animal would still recognize his master.

Jean Baptiste Denys, in Paris, was the first to transfuse blood into a man. In 1666 he injected nine ounces of lamb's blood into the veins of a youth suffering from a prolonged fever. The improvement was described as astonishing. Denys performed several successful transfusions of lamb's blood into the veins of an insane man.

In England, before the Royal Society, Richard Lower in 1667 transfused blood of a lamb into Mr. Arthur Coga, with the result that he "kept back impending insanity." The patient said he felt better. These experiments were encouraged by Charles II, and the immortal diarist Samuel Pepys takes note of them.

It was suggested that disagreement between husband and wife might be cured by a mutual interchange of blood by transfusion.

Tragedy soon followed these first successes. Gaspar de Guyre in 1667, "transfusing a great quantity of blood into several dogs," observed that the receiving dogs "pissed blood." In Denys's fourth case, transfusion was performed several times. On one occasion "his arm became hot, the pulse rose, sweat burst out over his forehead, he complained of pain in his kidneys, and was sick at the stomach. Next day the urine was very dark, as though mixed with the soot of chimneys." The patient died at his third transfusion and Denys was charged before the courts with murder. He was acquitted of this charge, but the Parlement of Paris forbade further experiments on human beings. After further deaths the transfusion of blood was forbidden

by an edict of the Pope in 1675.

Only sporadic experiments are recorded for the next hundred years.

However, in England the work of Howard in Oxford (1792), Russell in Suffolk (1792), and Erasmus Darwin (1796)—the grandfather of Charles Darwin—revived interest. James Blundell, obstetrician and anatomist of Guy's and Saint Thomas's Hospitals, was driven to experiment with transfusion of blood by a number of deaths from haemorrhage after childbirth.

In the year 1818 he invented a brass syringe with a three-way tap for direct transfusion of blood to patients. He used this syringe for six transfusions, two of these successful, and he transfused as much as 16 ounces of blood to one patient who recovered. Blundell next added a water-bath to delay coagulation and developed an instrument he named the impellor. The donor's blood was collected in a funnel and injected by a syringe kept warm by the water-bath. In 1828 he developed the gravitator, a funnel to collect the blood which in turn reached the patient by a long tube and a cannula; the whole apparatus was supported by an arm attached to a chair. Blundell performed at least 10 transfusions—some of his patients were already dead before he began the transfusions—and five of his patients recovered. Blundell laid down the basic principles of blood transfusion—for success blood from the same species was necessary, blood was not changed by passage through an instrument, venous blood was as effective as arterial blood, air should be excluded from the apparatus, and the blood should not be injected too quickly.

In 1859 Martin, of Berlin, reviewed 57 transfusions, 43 of which were successful.

Autotransfusion had been performed by Esmarch in 1868 followng Volkmann's suggestion. Defibrinated blood had been used by Virchow and Bischoff in 1835, but argument raged as to the wisdom of using changed blood. Blood was still regarded as a living fluid, and whipping or otherwise removing fibrin was held to change its character; this idea was a relic of the humoral theory that blood contained the vital spirit. Thomas Smith used defibrinated blood successfully in the treatment of *melaena neonatorum* at Saint Bartholomew's in 1873. Major in 1867 had used ammonium sulphite, and Braxton Hicks in 1868 had experimented with sodium phosphate, to delay clotting. About this period there was a veritable epidemic of blood transfusion and the results were often tragic.

During the Franco-Prussian War attempts at transfusion were numerous; the World War of 1914-1918 saw the development of the citrate technique, while the Spanish Civil War saw the use of stored blood become a routine procedure.

Landois in 1892 had suggested the use of hirudin as an anticoagulant, and Crile had developed the technique of direct anastomosis of an artery to a vein. A high grade of surgical ability is requisite and the volume of blood transferred can not be ascertained. It was not until the use of paraffin-coated apparatus that transfusion of blood without difficulty of clotting became a simple procedure. Paraffin had been used by Bordet and Gengou in 1901, and was fully developed in the Kimpton H. Brown tube method (1913) and the syringe method of Lindemann (1913) and Unger (1915).

In 1914 Hustin in Belgium discovered the anticoagulant property of sodium citrate, and Agote in Buenos Aires in 1915 first used citrated blood in human transfusion. Lewisohn and Weil, independently, also developed the citrate method.

The development of aseptic surgical methods following Lister had disposed of the danger of phlebitis and other types of infection following transfusion. Reactions in the recipient were the sole remaining problems to be overcome. The clumping of red corpuscles in foreign serum had been recorded by Creite in 1869; Landois in 1835 described agglutination and hemolysis. Ehrlich and Morgenroth in 1899 showed the presence in normal human serum of haemolysins to corpuscles of other species.

In 1900 Landsteiner and independently Shattuck demonstrated the presence of isoagglutinins and established three blood groups. In 1902 Descastelle and Sturli added a fourth group. Jansky in 1907 outlined our present classification of blood groups, and Otenburg in 1908 developed the clinical methods of typing blood and applied this to human transfusion. Moss in 1910 independently classified human blood and proved that isohaemolysis never occurs without previous agglutination. Thus the last danger of transfusion was removed, and it became an everyday procedure.

The science of transfusion has progressed until the last year or so we see the development of canned-blood technique, the establishment of blood banks and the use of cadaveric blood. What next? Will it be the transfusion of washed red cells to a patient requiring transport of extra oxygen or modified blood serum to patients needing proteins? Will a fluid replacing blood be developed, free from the dangers of the unexplained reactions that still occur?

BURIAL CUSTOMS OF LONG AGO AND FAR AWAY

T. M. Quinn, New York, in *New York Physician, Dec.*

Early man believed that the dead live on, and have the same needs as the living. The custom

which once was quite common among certain races of killing a man's favorite wife or his slaves at the time of his death is a logical result of this conception of life after death, as it was thought that he would continue to require their services in the land of the dead. Among some peoples, the custom of providing grave goods to accompany the dead into eternity took a rather practical turn. To avoid destruction of property, cheap imitations were buried or burnt with the body, or the objects were placed on or near the corpse while it lay in state and removed before its disposal. Thus it was believed that the dead man would retain the use of objects in the other world, while his heirs might still have the use of them in this.

In many places a definite position was given to the dead. In Egypt, from the Old Kingdom onward, the body lies with the head north, face to the sunrise. In England, with the advent of Christianity, it became a common practice to place the feet of the dead toward the East.* Buddhist tradition (in cases of burying instead of burning the dead) dictates a position with head north, face upward, which is as Buddha died. The Mohammedian must lie on his right side facing Mecca. The Japanese in his tub shaped coffin sits upright.

In the case of water burial, the erect position is obtained by weighting the feet.

Georges Clemenceau, famous premier of France during the first World War, was thus interred erect.

Burying in the latter part of the Bronze age was gradually replaced by cremation. The spread of Christianity banished cremation from Europe for many centuries. Other methods were the preservatiton of the body by smoke-drying or mummification; exposure to birds of prey, as practiced by the ancient Scythians, the Zoroastrians and the poorer Siamese; and river committal.

Rather closely associated with water burial is the practice still followed by some island peoples of placing the deceased in a canoe and pushing it out to sea, with a wooden bird on the prow of the funeral canoe in order to guide it on its way.

Tacitus states that Nero's wife was embalmed "according to the manner of foreign kings." Statius affirms that the body of Alexander the Great was embalmed with honey, which was also employed to conserve the corpse of Agesipolis I during its conveyance to Sparta for burial. In 1135 the body of Henry I was embalmed by a method reminiscent of that employed by the Egyptians.

Embalming developed out of experiments made to discover a satisfactory method of preserving anatomical preparations. The substances used included essential oils, alcohols, camphor, pitch, salt and corrosive sublimate. Gypsum was also used as a dehydrating agent.

*I witnessed a burial in Southern Virginia of a member of a family in which this sentiment was strong. The grave had been filled when it was discovered that the man had been buried with his feet to the West. The earth was removed and the coffin turned about so that the burial would conform to custom of his English ancestors.—*J. M. N.*

PEDIATRICS

THE ACUTELY ILL CHILD

J. M. Rector, San Francisco, in *Rocky Mtn. Med. Jl.*, Dec.

Bed rest, often neglected, is seldom overdone. It should be insisted upon for the febrile child and maintained for a variable period after the t. has become normal. Exceptions are infants under two with no evidence of serious illness and t. of 102 or less. Such patients are often not as restless if confined to a room rather than to bed.

Most infants, with urging, will take water fairly well from a bottle, at frequent intervals. Liberal dilution of the bottle feeding offers the double advantage of reducing the ingestion of food and increasing the intake of water. Fruit juices, clear broth, carbonated drinks, dilute nectar, weak tea, etc. are given, depending upon the individual whims. With severe vomiting, nothing is given by mouth for two hours, then teaspoonful amounts, gradually increased as tolerated.

The rectal route is of limited use except in older children and intraperitoneal infusions are rightfully on the wane. Hypodermoclysis is very effective. Subcutaneous injection should be limited to the thighs, if there is dyspnea. If more rapid absorption is desired use the intravenous route, taking care when using glucose not to exceed an isotonic solution (5.5%), or dehydration may result. Not more than 10 c.c. per pound, or a total of 250 c.c., should be given at one treatment to infants under two years of age.

Food is not forced under any circumstances. The child's appetite is usually a reliable guide. Milk is not well tolerated in the presence of fever and fats are particularly to be avoided.

Bowels are best regulated by enemata, which are valuable in controlling the fever. Laxatives are greatly abused and are seldom necessary. Under no circumstances should calomel or castor oil be administered.

Fever is not an unmixed evil. It is a part of the normal mechanism of defense against bacterial invasion. T. of 105 or 106 should be reduced because of the discomfort and restlessness and the danger of a convulsion.

Intelligent bathing is satisfactory, but in unskilled hands there is danger of chilling. In the

average case is better to use an antipyretic, of which acetylsalicylic acid is best. Its febrifuge, analgesic and sedative qualities in children are of great value. One grain to the year of age, varied as indicated.

Most drugs are best given dry, the tablet crushed in a spoon and mixed with a small amount of sugar and water, sweetened orange juice, honey, applesauce or jelly. For the sulfonamides which are often used in relatively large amounts, tomato juice makes an excellent vehicle.

Sedatives are often neglected. Phenobarbital is well tolerated, ¼ grain, t.i.d., to an infant of six months. The prophylactic use of phenobarbital in acutely febrile states of sensitive children often prevents convulsions. For hypnosis, sodium phenobarbital or seconal in adequate dosage.

The use of hot baths, sweats and diaphoretic drugs so popular among adults as abortive measures at the beginning of a fever have little usefulness in childhood. The initial purge is a tribute to tradition and is contraindicated. The coal-tar preparations should be strictly avoided. Amidopyrine is dangerous at any age. Morphine and atropine, valuable drugs, must be used with great caution, as idiosyncrasy is common.

BETTER RESULTS IN POLIOMYELITIS

EDITORIAL in the *Medical Record*, December 17th.

The revolutionary treatment for infantile paralysis, developed during the last 30 years in Australia by Sister Elizabeth Kenny, was officially approved by a committee of the National Foundation for Infantile Paralysis at the second annual meeting of the Foundation at the New York Academy of Medicine.

Sister is the title conferred on graduates and administrative nurses in Australia; it has nothing to do with any religious order in Sister Kenny's case. Miss Kenney, in 1910, worked alone in the Australian bush country 100 miles away from the Toowoomba General Hospital in Queensland, to which she belonged, and had to rely entirely on her own means and ideas in treating children stricken with infantile paralysis. From this start developed a new kind of technique in the treatment of the paralyzed children, which has been officially approved in Australia where government funds sustain Elizabeth Kenny clinics in eight large hospitals in different parts of the Dominion. Hundreds of nurses there take the two-year postgraduate course which fits them to use the Kenny method.

In June, 1941, Wallace H. Cole and Miland E. Knapp, of the departments of orthopedic surgery and physical therapy of the University of Minnesota Medical School, presented a preliminary report on 26 patients with acute anterior poliomyelitis treated by the Kenny method. The report stated that no contractures or deformities occurred after the treatment. Even the most severely paralyzed patient had passively full range of motion in all his joints. The patients were more comfortable and more cheerful.

The committee of the National Foundation reported that during the early stages of infantile paralysis the length of time during which pain, tenderness and spasm are present is greatly reduced and contractures caused by muscle shortening during this period are *prevented* by the Kenny method. The general physical condition of the patients receiving this treatment seems to be better than that of the patients treated by some of the other methods during a comparable period. The report emphasized that patients under the Kenny treatment have been limited, with few exceptions, to those in the early or acute stage of the disease.

The method is characterized by the *abandonment of immobilization*. No splints or casts are used. Hot fomentations are applied to the affected muscles, and these are renewed every two hours in most cases. Passive movements through the range of motion possible without pain are carried out several times a day. In addition, an attempt is made to maintain mobility of the part by training once or twice a day as soon as muscle spasm is sufficiently reduced. The details of the method of treatment cannot be learned quickly.

Sister Kenny had to overcome great difficulties until her method had gained the approval of the medical world. But it seems that this goal now has been reached—to the great benefit of suffering and needlessly crippled children.

WHAT ARE DECIBELS?

(J. J. Roth, Newark, in *Jl. Med. Soc. N. J.*, Dec.)

How do decibels measure hearing acuity?

The faintest sound just audible to the normal ear of a young adult is taken as the thresold of normal hearing. For the deafened subject the amount of amplification required furnished yardstick for the degree of deafness.

Decibels are expressions of the amount of amplification to make the threshold sound audible to the deafened ear. A decibel, as the name implies, is a tenth of a unit, the bel being the unit.

The bel is *not a unit of sound intensity*, it is a unit of *relative* sound intensity. With a unit of absolute sound intensity, one unit would represent a certain degree of loudness, two units twice that loudness and so on. On the other hand, a unit of relative sound intensity measures how much louder is one sound when compared to another.

A bel amplifies 10 times; two bels will not amplify 20 times, nor three bels 30 times. On the contrary, the application of a second bel will amplify the resultant sound again 10 times, which means that the original sound will be amplified 100 times, and three bels will accordingly give an amplification of 1000.

As a guide to the evaluation of the degrees of hearing loss the following Rule of Nine may be suggested. Dis-

regard all losses up to 9 *db*, inclusive; they are to be considered within normal variations. From 10 to 18 *db* the loss is slight. From 19 to 27 *db* the loss is moderate. Losses of 28 *db* and over are marked.

Meaningless it is to express hearing loss on a percentage basis. Considering the enormous difference between a 10 and a 30 deciebl loss—the one being practically within normal limits, the other denoting a serious defect—the futility of all such attempts becomes apparent. Hearing acuity with its enormous range can not be expressed on any percentage basis, surely not on a percentage decibel basis.

SURGERY

Geo. H. Bunch, M. D., *Editor*, Columbia, S. C.

OPERATING ROOM STERILIZATION

Certainly of the sterility of everything coming in contact with the wound and with the operative field is the basic principle of aseptic technique. The surgeon's hands and the patient's skin in the operative field, after being mechanically cleansed, may be disinfected only by chemical agents. However, instruments, rubber gloves, sutures and drygoods must have absolute sterilization, the satisfactory accomplishment of which necessitates the best equipment and the service of especially trained operating-room personnel. It is a problem about which the surgeon is too little concerned.

Spores are extremely resistant and the degree of sterilization which is effective against pyogenic and vegetative bacteria is not effective against spores. Exposure for 30 minutes to saturated steam at 250° F. and at 15 pounds pressure in an autoclave is necessary to kill spores. The autoclave should not be overloaded. Goods should be loosely wrapped so that each package is readily permeated by steam. The packages should be placed so that an up-and-down passage-way is left. Air is twice as heavy as steam and when steam is turned on a vent in the bottom should be opened until the air which settles has escaped. Air and steam do not mix and there can be no bactericidal effect of saturated steam in a pocket of residual air.

Contrary to the usual belief, sterilization by boiling will not kill spores; yet probably 90 per cent of the hospitals in this country undertake to sterilize instruments for operation in this way. Instruments should be mechanically clean, free from scale and with locks open so that every part comes in contact with steam. Only in an autoclave can complete sterilization be assured. Walter has perfected an autoclave for instruments in which a sterilizing temperature of 270° with saturated steam may be reached in a few seconds. Spores are killed in two minutes.

It is not generally appreciated that after a laparotomy there, without the development of either peritonitis or wound suppuration, the patient may die from infection by spore-forming anerobes introduced at operation. Gas-bacillus infection and post-operative tetanus both develop from spores which have survived sterilization. The role played by unrecognized and unsuspected anerobic bacteria in post-operative infection is not fully understood. We know that by symbiosis tetanus and pyogenic bacteria, when occurring in the same wound, are mutually helpful. We must find by experiment bacteria which are biologically antagonistic, to the anerobes, so that their bacteriophagic action may be utilized clinically. Undoubtedly the surgical bacteriologist is the greatest need of the hospital of today. The only way to prove the efficiency of the autoclave is to make frequent anerobic cultures of the goods that have been sterilized in it. Because color change of controls is from high temperature and not necessarily from contact with steam it cannot be an accurate index of sterility.

The sterility of commercial catgut of standard make bought ready for use in sealed glass tubes is absolute.

GENERAL PRACTICE

Walter J. Lackey, M.D. *Editor*, Fallston, N. C.

BENZEDRINE SULFATE IN OBESITY

All of us want and desire to know a safe, reliable and endurable means of getting rid of excess fat. Here[1] it is, apparently.

Twenty-seven obese patients were chosen for the study. Patients with cardiovascular, renal, or hepatic disease were excluded. All but one of the group were women, 21 of whom were being treated at the John Gaston Hospital for various gynecological disorders. The others were suffering from uncomplicated obesity.

All of the group had previously attempted weight reduction through diet. Thyroid extract had been given in 11 cases. In nine of these it had failed to cause weight loss and it was not well tolerated in one of the two in which it proved effective.

The original dose of benzedrine sulfate was 5 mgm. a day—2.5 mgms. 15 to 30 minutes before breakfast and lunch, increased by 2.5 mgms. every 4th day, in no case exceeding 20 mgms. Other medication was given in indicated cases, but only one patient received thyroid extract in conjunction with benzedrine sulfate. *No dietary restriction was imposed.* Throughout the experiment the patients weight, blood pressure, and endocrine function tests were made.

After periods ranging from two to 14 weeks (ave.

1. R. B. Chrisman, Jr., & Wm. Maury, Jr., Memphis, in *J. Tenn. State Med. Assn.*, Sept.

7) benzedrine sulfate was discontinued and the patients were put on a diet from which bread, potatoes, fats and sweetened foods were excluded. Fat disappeared particularly from the abdomen and hips.

Benzedrine sulfate appears to be indicated for patients who are unable to adhere to a dietary regimen; but in many cases, especially when the excess fat has been recently acquired, medication is not necessary. We tried this with a patient who seemed to have a good reason for wanting an unusually rapid loss of weight. By combining our routine benzedrine schedule and the diet described 17 pounds were lost in two weeks. Blood pressure remained unaltered and there were no ill effects. The patient lost an additional pound in the third week, during which she continued the diet without medication.

Benzedrine sulfate enables the patient to adhere to a low-calorie diet; depending on the volition and desire of the patient, it may thus establish better eating habits. In our series, the desired adjustment was often made within a few weeks.

Twenty-seven obese patients who had proved refractory to weight reduction were given benzedrine sulfate without dietary restrictions for periods ranging from two to 14 weeks. The average weight loss was two pounds a week, the total loss ranging from nothing to 30 pounds. There were two failures.

Unfavorable reactions were mild and transitory and there was no significant rise of blood pressure.

Most patients in the series reported decreased appetite, increased energy, and an improvement of mood.

It is concluded that benzedrine sulfate, chiefly by virtue of its central action, is a valuable aid in weight reduction.

FEAR—THE GREATEST ENEMY OF MENTAL HEALTH

A WRITER on Mental Hygiene whose name escapes writes thus sensibly on Fear—the harmful and the wholesome.

It is important that we should try to understand what *fear* is, what good uses it has, as well as the injuries it may do us if not properly understood and controlled.

We hear much about "social security." Measures taken in the name of social security will help people to avoid the fear of losing their jobs or of finding themselves penniless in their old age. Unquestionably, social security legislation is going to do much to avert some of the more obvious fears that are common to almost all people. But when we speak of fear as the first enemy of mental health, we are talking about the individual and we refer to the factor of the emotional and mental security that must be present if the individual is to escape the sort of fears which threaten his mental health. health.

Let us begin by recognizing that fears have a certain protective value. Fear gives us a special kind of energy usable in getting away from danger or for overpowering an assailant. This type of fear is a normal, useful, instinctive reaction to some obvious condition facing us at the moment. But beyond the instinctive fears are apprehensions of events which have not and may never occur. The imaginative person is most apt to have this type of fear, and the higher the intelligence and imagination of a child the more fears he is likely to acquire at one time or another.

The best way to get rid of a groundless fear is to bring it out in the open, to recognize it for just what it is. To scold or laugh at a child's fears is apt to cause the child to keep his fears to himself, making it more difficult for the parents to understand and dispel them. The child may even lose sight of the origin of his fears, and then they are much more difficult to root out.

There is no ground for the common belief that specific fears are inherited. On the contrary, most such fears are created in the children by the suggestion of the parents, or simply by the child's imitation of the parent's adult reaction to darkness or deep water.

Most psychologists seem to agree that infants are born with only two instinctive fears—one, that induced by a sense of falling; the other, that induced by loud noise. All other fears, they tell us, are acquired through imitation or suggestion.

More and more are we realizing the importance of education during infancy, that the infant must learn from almost his first day that certain unpopular actions will inevitably be followed by certain unpleasant consequences; and, vice versa, that certain other actions will be followed by more favorable results. If his world should suddenly become arbitrary, unreasonable, capricious, he would be completely bewildered and the mental fields for the cultivation of harmful fears would be ready for the seeds. The little child should have a minimum of disagreeable surprises in his tender years, and allowance should at all times be made for the imaginary world of childhood.

We must never make the child self-conscious by making fun of him, by patronizing him or by being impatient at his efforts to express himself. Lifelong feelings of inferiority may be the result.

We must neither create fears nor suggest them among our children—for fears if indulged or culti-

vated for any length of time, may ultimately disturb all normal physical processes. They tend to cause indigestion, high blood pressure, loss of appetite. Imaginary fears may undermine the child's self-respect and his sense of security.

The best insurance for mental health is a combination of physical health and a happy home. The child should be healthy, happy and, so far as possible, self-dependent.

Happiness requires that the child shall feel secure in the love and care of his parents. Indifferent or neglect is often reflected by rebelliousness on his part. On the other hand, if the child's ambitions are too high or his expectations of life too great, he will sooner or later realize the unhappiness of disillusionment. One of the common killers of happiness among children is disharmony between its parents. A lack of consideration of one parent for the other will shake the child's whole universe.

Other obvious causes of fear and unhappiness among children are brow-beating, threatening them with the bogey-man, or locking them in a small room or in a dark closet. On the other hand, too much humoring is perhaps as bad. Over-solicitude or over-protection on the part of the parents will prevent normal character growth and make adjustment to self-dependent, successful adult life difficult or impossible.

The world abounds in persons who have been ground down by fears imposed upon them through man's inhumanity to man. Future generations of our people should be so reared as to assure that they will feel only that instinctive fear which is of the essence of protection. To bring forth and bring up such generations is manifestly the highest of duties to ourselves—as parents, as citizens, as human beings.

OBSTETRICS

THE SHORTENING OF LABOR WITH SYNTROPAN

John E. Stoll, M.D., Chicago, in *Am. Jour. Obst. & Gyn.*, Sept.

The duration of labor, averaging 18 hours in the primipara and 12 hours in the multipara, has ever been an important consideration in obstetrics. There are many dangers associated with prolonged labor, and the patient should be spared by harmlessly shortening the parturition process.

The undesirability of long-continued administration of the usual obstetric analgesics is well recognized.

Cervical dystocia may be a manifestation of any one of several types of abnormal mechanisms, or a combination of abnormal mechanism plus other factors. A common abnormality is incarceration of the anterior lip of the cervix delaying descent of the presenting part. This requires correction by manipulative means. On the other hand, a functional disturbance of the cervix, such as cervical spasm, may be a cause of dystocia.

In a search for a preparation which would minimize the risk of childbirth by shortening labor, without introducing any new elements of danger, the nonnarcotic antispasmodic syntropan was selected for trial. The drug has been demonstrated to have antispasmodic action on spastic smooth muscle, similar to that of atropine, but not attended by the latter's undesirable by-effects.

The principle of antispasmodic treatment would seem to be removal of resistance offered by the spastic cervix, at the same time preventing increase in rhythmic contraction and tension in the uterus as a whole which would normally be engendered by cervical resistance.

Our procedure consisted of the oral administration of two tablets of syntropan, 50 mg. each, to a group of 34 patients when cervical dilatation of several centimeters was first noted. No other medication of any kind was given. This series included primiparas and multiparas. The progress of labor was closely observed in the group and in a comparable number of untreated cases constituting the control group. Patients in both groups were taken at random and not selected according to their obstetric histories. There was a dramatic reduction of labor-time in the syntropan-treated cases.

With the warranty of the encouraging results obtained in this small series of cases ,the use of syntropan in the same manner was observed in a very much larger series of cases. The results in this larger series show the same dramatic reduction in labor-time, the first stage of labor averaging six hours and 21 minutes in 60 multiparous patients and nine hours and nine minutes in 42 primiparous patients.

Upon comparing the labor-times of the control patients with those of treated patients, it can be seen that labor in the treated cases was, on an average, one-half as long as in the control cases. Even in three cases in which version and extraction were done, the first stage of labor was shortened.

In none of the treated cases was the duration of the second stage of labor longer than in the average normal; to the contrary, it was decidedly shorter. Thus it appears that the antispasmodic, syntropan, unlike sedatives, does not decrease voluntary or involuntary efforts.

The use of syntropan in labor apparently has no deleterious effect upon the infant. In the series of 102 cases the condition of the infant immedi-

ately after delivery was "good" in 97 cases, "fair" in 3 cases, "cyanotic" in 1 case, and "stillborn" in 1 case. The average birth weight of the infants in this series was seven and one-fourth pounds, well within the normal range, hence weight of the infant can be eliminated as a factor which might otherwise have abnormally influenced duration of labor in the series as a whole.

THE TREATMENT OF SEPTIC THROMBOPHLEBITIS WITH HEPARIN AND SULFATHIAZOLE

(H. S. Davidson, Atlantic City, in *Jl. Med. Soc. N. J.*, Dec.)

Heparin is obtained from liver, lung and muscle of the ox or dog. It acts as the physiologic anticoagulant, is nontoxic for man, not absorbed from the alimentary tract. In blood transfusions heparin is used satisfactorily ,either by adding the drug to the blood as it is withdrawn, or by giving the donor a sufficiently large dose to change the clotting time of his blood.

The heparin used in the cases reported here was obtained from the Roche-Organon Co. under the name of Liquacmin. It is packaged in 5 c.c. vials, each containing 10,000 anticoagulant units.

Heparin is probably the normal anticoagulant in circulating blood, and either assists or is necessary in maintaining blood in its fluid state.

Our cases illustrate the prophylactic use of heparin and sulfathiazole in patients in whom peripheral thromboplebitis was recognized. Fever was present, but blood cultures were sterile. Heparin therapy was instituted to render the blood less coagulable and to prevent extension of the thrombus. Sulfathiazole was given for its bacteriostatic action and reduce the likelihood of embolic accidents.

Heparin, although apparently effective in the prevention of embolism, probably will be of limited usefulness for the present because of its expense and method of administration. If future developments will permit oral administration, it may become of great value as a routine prophylactic agent. Our use of heparin, both as a prophylactic and therapeutic agent, has yielded gratifying results.

CONGESTIVE HEART FAILURE

(H. A. Schroeder, New York, in *Amer. Heart Jl.*, Aug.)

There is good reason for rigid restriction of sodium chloride in chronic congestive heart failure. Considerable water is necessary in the economy of the organism, but excess salt is not. Water can not be deposited in the tissue spaces without salt.

The administration of comparatively large amounts of fluid to cardiac patients does not increase the rate of formation of edema, provided the intake of salt is low enough. Limitation of the ingestion of salt, including limitation of those foods in which the salt content is high, imposes little hardship upon the patient; whereas restriction of fluids to the degree necessary to produce an effect may be difficult, uncomfortable, even hazardous. For practical purposes it appears wise to allow patients with heart failure to drink as they please, provided the intake of sodium chloride (and other sodium salts) is carefully limited.

Compared to the amount of salt in the diets used in this study, the amount in the usual salt-free or cardiac diet is relatively high. An ordinary ward diet to which no extra salt and no salty foods have been added contains 4.0 Gm. of sodium chloride; one cooked without salt contains 2.0 to 3.0 Gm. Some patients gain weight when taking 2.0 Gm. and remain the same when taking 1.0 Gm. of salt in 24 hours. The beneficial effects of the Karell diet (800 c.c. of milk in 24 hours) may be due to the low content of fluid and of food, but expecially to the fact that the salt content is also reduced to 1.0 Gm.

Few complaints were made about these diets when the food was properly seasoned.

CAN SHIPWRECK SURVIVORS LIVE ON SALT WATER?

(Randolph Leigh, in *Forgotten Waters*)

In a recent expedition to the Gulf of California, Mr. Leigh came across a case which may be the means of saving many lives. A Mexican Indian named José Vitiriez testified to having lived eight weeks on a barren island where there was no fresh water or ordinary food. He attributed his survival to two things: immersion in salt water, and a diet of plankton—crustaceans a tenth of an inch long, which may be thought of as miniature lobsters or shrimps. Medical men say immersing in salt water would tend to draw away the body's juices. The question then was, would a plankton diet contain the needed liquids without a fatal salt content?

Mr. Leigh submitted the question to the biology departments of California, Princeton, Harvard and Cornell Universities, and to the Curator of Mammals of the Smithsonian Institution. The consensus was that such a thing is possible. Says Dr. J. M. D. Olmsted, chairman of the Division of Physiology of the Medical School of California: "The question is not the amount of water in salt water to keep a person alive, but the amount of salt in it to poison him. . . . . I should say that the Indian by getting his water solely from his food would probably not include enough salt to do him harm." Dr. Alfred C. Redfield, of the Biological Laboratories of Harvard, holds that ". . . . it would be worth while if someone would make some careful experiments as to just how much salt water the human body could deal with." Dr. J. Douglas Hood, Professor of Biology of Cornell, writes: "My guess would be that if the plankton consisted largely of green Algae, the solute-content necessary in sea water might be maintained through the photosynthetic production of sugar molecules. If this occurs, such marine plankton, if sufficiently drained of sea water, might yield enough water to sustain human life, as well as enough carbohydrate, protein, fat and vitamins to serve as food."

Mr. Leigh believes that it is important that these experiments be made now, and the diffusion of this information may possibly save hundreds of lives. He suggests a plankton net in each lifeboat.

A new method of study establishes with certainty that the stomach and intestinal tract are the usual port of entry of infantile paralysis into the body and that the existence of virus in the excretions from the bowel may be the means by which the disease is spread. Indeed already there is evidence from intensive study of some of the recent outbreaks that virus capable of causing infantile paralysis can be found only in the bowel excretions of persons who have had the disease, *also* of persons who have been in contact with cases of the disease but have not themselves been ill. This does not mean that on occasion the virus may not enter through nerves other than those in the throat, stomach and intestines. It does mean that these are the usual place of entry.

Perhaps out of these newer studies may come means of control which will lead ultimately to the elimination of the disease, as typhoid, spread by similar routes, has been largely eliminated.—*Hygeia.*

In a series of 500 clinical cases of heart disease studied 320 were classified as hypertensive, 78 as arteriosclerotic (coronary), 72 as rheumatic, 10 as syphilitic, six as miscellaneous.

SOUTHERN MEDICINE & SURGERY

Official Organ

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As is true of most Medical Journals, all costs of cuts, etc., for illustrating an article must be borne by the author. encloses postage.

SMOKE NUISANCE ABATABLE

NONE of us enjoys the mixture of coal smoke and fog to which some inspired person has given the name smog. On what harm it will do to health there appears to be generally a great diversity of opinion. A symposium on this subject published in the excellent *Cincinnati Journal of Medicine's* January issue, offers facts and opinions which carry weight. The participants were the Director of the Department of Public Health of Pittsburgh, and the Professor of Experimental Medicine and the Professor of Mechanical Engineering in the University of Cincinnati. If reliable information on the effects of smog and how to get rid of smog is not to be had from these three, we shall have to give up.

Charlotte gets interested, spasmodically, in doing something toward lessening our smog nuisance, but there is no follow through.

Everybody knows it is a costly nuisance.

Reporters go around interviewing doctors as to how it hurts health. Few, if any, of us are qualified to give an answer on which any reliance may be fairly placed.

The three gentlemen to be quoted will help us out of our difficulties. And this applies to many another city. Doctors everywhere could better sustain the repute of our profession by keeping posted on this and all other matters affecting the health and comfort of the public.

SMOKE AND HEALTH

I. H. ALEXANDER, M. D., Pittsburgh

A FRENCH army surgeon visiting Pittsburgh in 1805 made the statement, "Pittsburgh is a good place in which to make a living but a poor place to become ill. The citizens are prone to die of pneumonia, but persons suffering from phthisis seem to do very well." We now know this statement to be correct. In March, 1815, we find the citizens writing letters to the newspapers advocating some plan for smoke abatement: "They complained that, in what should have been broad daylight, the judges sometimes have to read their charges by candlelight, so thick is the atmosphere."

In August, 1834, the Pittsburgh *Gazette* reported 44 deaths from cholera and then proceeded to attribute the good health of the citizens within the city limits to "our coal smoke, pure air, and the excellant hydrant water."

We have two x-ray standards for determining a normal lung in Pittsburgh. The x-ray plates of an adult coming from the farm will show hilus shad-

ows, normal in size and density, and little or no evidence of bronchial markings extending beyond the inner zone; while in the case of an adult who has spent the greater part of his life in Pittsburgh we find hilus shadows enlarged and of increasing density with bronchial markings extending well into the outer zone. Should pulmonary tuberculosis develop in later life there is an abundance of evidence to prove that the prognosis in the case of the Pittsburgher is far better than in the case of his country cousin. This better prognosis, we believe, is due to the blocking of the pulmonary lymphatics by carbon and is aided by an increase in pulmonary fibrosis.

Dr. Samuel R. Haythorn, Director of the Singer Memorial Laboratory, made a study of the lungs of over 3000 persons of all ages who died in Pittsburgh hospitals from all causes. He grouped the cases of anthracosis into five classes according to the amount of carbon seen in the sections of the lungs. He found as many cases of lobar pneumonia in patients free from anthracosis as he found in patients in anthracosis classes 1, 2 and 3. Therefore, was unable to prove that anthracosis of a degree that would develop from the inhalation of Pittsburgh atmosphere exerted any deleterious effects whatever. In evaluating classes 4 and 5, however, which belong in the industrial group, 17 per cent of those who develop lobar pneumonia showed failure of resolution.

Cities selected for study by the United States Public Health Service for the period 1931-1933 are grouped by degree of atmospheric pollution. The degree of pollution for all the cities studied is taken as 100—first group 137, second 97, third 56. The results clearly show that the greater the contamination of the air the greater the number of pneumonia deaths. These figures strongly suggest the possibility that death from pneumonia is inversely proportionate to the pollution of the atmosphere.

The pathologic lesions observed in the upper respiratory tract of persons living in a smoky atmosphere are probably due to the solids, other than carbon, and the complex tars and gases. There is considerable evidence to the effect that citizens of a smoky city develop a certain degree of immunity to smoke.

With dense concentration of polluted atmosphere over a period of a few days we find the greatest increase in the common cold and the other acute respiratory infections and acute exacerbations of chronic sinus infections. Ninety-five per cent of all lobar pneumonia cases are preceded by acute upper respiratory infections which are usually diagnosed as common colds.

Conclusions are that:

From the public health point of view a smoke-polluted atmosphere is a costly luxury. It is often an important factor in the pathogenesis of respiratory disease, contributes much to the discomfort of the seriously ill from all causes, and it has a depressive and inhibitory effect on the people as a whole.

The tars, the gases, and the solids other than carbon, are the important elements contributing to the pathogenesis of respiratory disease.

Smoke contributes immensely to the deficiency in ultraviolet light, an essential agent in maintaining resistance to infection.

Smoke is the most important factor in the high pneumonia mortality rate in industrial cities.

A PRACTICAL APPROACH TO THE PROBLEM OF URBAN POLLUTION

C. A. Mills, M.D., Cincinnati.

St. Louis has demonstrated that pollution of urban atmospheres can be controlled.

Soot particles have no known disease-producing action. They may cut us off from the sun's ultraviolet light, but we must rely upon food sources anyway for our vitamin D during the winter months since even the clearest winter sunshine is of little value this far north.

The fine ash particles carried out with smoke constitute a large part of the hundreds of tons of sediment falling upon our city daily. This ash is similar to the rock dust which has killed hundreds of miners and tunnel workers from silicosis. Just what it does to us through the years is difficult to learn. We know that the soft-coal-burning cities of the Ohio valley are among the country's worst for tuberculosis, particularly in the slum areas where fly-ash is most dense. These same cities also suffer most severely from chronic sinus inflammations. Low-volatile coals may produce just as much ash as high volatile varieties, many industrial plants and apartment or office buildings intentionally blow their fly ash out over the city at night to get rid of it.

Sulphur oxides, when dissolved in the secretions of the nose and lungs, produce acids and probably add to the irritating effects of the city's smoke. The sulphur content of different coals bears little relation to their smoke production. Other substances given off are harmful, especially in the burning of high-volatile coals. With higher furnace temperatures more complete burning of all the volatile matter takes place. As smoky flue gases cool down in the chimney, these tar compounds condense on the fly-ash and carbon-soot particles.

Cancer of the lungs has within the last two dec-

ades climbed from an insignificant place to the leading type of cancer in men and especially in city men of the low-income groups. Cancer of the stomach into which organ much of the nasal mucus is swallowed, is most prevalent in these men of the city slums who are most exposed to the air contamination. Recent statistics have shown that lung cancer is decidedly more prevalent in Pittsburgh and Birmingham than in other cities with less atmospheric contamination. In one European mining community lung cancer became severe enough to produce 50 per cent of miners' deaths before protective steps were finally taken. Surely we will not wait that long here in our American cities.

Steam liberated in power production is the factor most responsible for the dense "smogs" of our colder months. It is on our windless days of winter that the smoke problems becomes particularly acute and dangerous to health. All the combustion products are then held fully suspended or in watery solution by the thick cloud of steam particles, and this heavy poisonous layer blankets the city, sometimes for weeks at a time.

SMOKE ABATEMENT IS POSSIBLE AND PRACTICAL

C. A. Jorgent, M. E., Cincinnati

The objectionable ingredients in smoke, that may be produced by the burning of solid fuel, are the carbon and tar usually referred to as soot, the fly ash, and the sulphur gases.

The soot is the result of burning bituminous (soft) coal. In very nearly all cases the soot in the objectionable smoke is caused by burning a coal with too high a volatile content for the particular fuel-burning equipment and installation at hand.

It is entirely possible and practicable to greatly reduce the objectional ingredients in smoke. To reduce the soot content of smoke, use a fuel other than soft coal in hand-fired boilers and furnaces of the ordinary kind. Coke, gas, or oil offers a wide latitude of improper firing before produce objectional smoke; whereas soft coal will produce dense clouds of black smoke at the slightest opportunity. If a soft coal is burned in an ordinary hand-fired furnace, a coal should be used containing not over 20 per cent volatile matter—a coal of the semi-bituminous class. With this coal only a slight amount of visible smoke would be produced. To burn soft coal of the bituminous class having a volatile content of more than 20 per cent, equipment designed to burn this coal should be used, equipment such as a stoker or a specially designed furnace. The burning of soft coal in an ordinary, hand-fired domestic furnace should be prohibited.

To reduce fly ash in smoke, stokers should have gradual-acting air-control on starting and a good type of fly ash eliminating equipment. At the base of all chimneys for small boilers and warm-air furnaces there should be a fly ash precipitating chamber equal in area to at least 50 per cent greater than the required flue area. This chamber shall extend above the smoke pipe entrance a minimum of 6 inches and below the bottom of the smoke pipe entrance a minimum distance of 32 inches. At the bottom of this chamber there should be a clean-out door consisting of a tight-fitting case, iron frame and door.

The smoke nuisance can be corrected by requiring that a few simple practical things be done.

TRI-STATE PROGRAM

An excellent program for our meeting at Greenville, February 23rd and 24th is abuilding. Except for a few features and details it is abuilt.

Our own members will present clinics in which will be taught in the most practical way much that we all need to know and put into effect in our daily practice.

A mere naming of our guest speakers suffices to show that this will be no ordinary medical meeting; but one which, however many others you have attended in the past year, you can in no wise afford to miss.

Dr. Hugh Hampton Young of The Hopkins will give us the most authoritative information on Surgery of the Prostate, and he will include in his presentation a discussion of Prostates in Females. The name Hampton can never fail to evoke enthusiasm anywhere in Tri-State territory, certainly never anywhere in South Carolina.

Dr. Harold L. Foss of Danville, Penn., will tell us what has been learned from an intensive study of 3000 cases of gallbladder disease—a condition which gravely concerns us all.

Dr. Russell L. Cecil of New York City promises encouraging facts for us to take home to our patients afflicted with arthritis who have "suffered many things of many physicians and had cure of none."

Dr. Benjamin Sieve of Boston is to tell us just how he has so juggled his vitamins as to return gray hair to its normal color, and, as a by-effect, made hitherto barren couples to bring forth young after their kind.

And there is prospect of having from the John Gaston Hospital, Memphis, report of highly gratifying results from a safe, rapid and endurable means of doing away with an excess of this "too, too solid flesh."

Programs will be mailed out well in advance of the meeting.

Make your arrangements to attend and to bring along your doctor neighbors.

NEWS

MARLBORO COUNTY (S. C.) MEDICAL SOCIETY

The Twenty-second New-Year Meeting and Banquet was held at the Country Club, at Bennettsville, the evening of January 7th.

Post-prandial oratory was had from Dr. Geo. M. Truluck, President S .C. Medical Association, Orangeburg; Dr. Thos. A. Pitts, President-elect S. C. Medical Association, Columbia; Dr. Julian Price, Secretary-Editor S. C. Medical Association, Florence, and Dr. Roscoe D. McMillan, Secretary Medical Society of the State of N. C., Red Springs.

Formal Program

Sterility—Dr. Robt. P. Greenblatt, Augusta, Ga. Discussion opened by Dr. J. D. Guess, Greenville, S. C., and Dr. Robert A. Ross, Durham, N. C.

Practical Points in Pediatric Practice—Dr. Sam P. Ravenel, Greensboro, N. C. Discussion opened by Dr. William Weston, Jr., Columbia, S. C.

Fractures of the Wrist From the Industrial Standpoint—Dr. F. A. Hoshall, Charleston, S. C. Discussion opened by Dr. Harry Winkler, Charlotte, N. C., and Dr. Austin T. Moore, Columbia, S. C.

For more than twenty years this has been one of those social and scientific meetings which South Carolina doctors know so well how to arrange and conduct. This year's meeting was well up to their high standard.

SUFFOLK TO HAVE NEW HOSPITAL

Amedo Obici, president of Planters Nut and Chocolate Company, Suffolk, Va., has established a $50,000 trust fund for the erection of a hospital as a memorial to his wife, Louise Obici, who died in 1938.

Announcement of plans for the hospital said it would be erected in or near Suffolk for indigents of that city and Nansemond County.

Citizens of this community will name a corporate board of directors, which will select the hospital site.

The donor, whose company has large peanut processing operations at Suffolk and elsewhere in the United States, is a member of the board of visitors of William and Mary College.

THE BOWMAN GRAY SCHOOL OF MEDICINE OF WAKE FOREST COLLEGE

announces the opening of *A Private Diagnostic Clinic*, Winston-Salem, N. C.

Medicine: Dr. George T. Harrell, Jr., Dr. Wingate M. Johnson, Dr. Robert L. McMillan, Dr. John R. Williams, Jr.

General Surgery: Dr. Howard H. Bradshaw, Dr. William H. Sprunt, Dr. A. deT. Valk.

Neurosurgery: Dr. Henry G. Schwartz (after July 1st).

Neuropsychiatry: Dr. Elbert A. MacMillan, Dr. John A. Rose.

Dermatology: Dr. William L. Kirby.

Obstetrics and Gynecology: Dr. Frank R. Lock.

Pediatrics: Dr. Leroy J. Butler.

Endocrinology: Dr. Arthur Grollman.

Orthopedics: Dr. Robert A. Moore.

Otolaryngology: Dr. James A. Harrill.

Ophthalmology: Dr. W. Paul Speas.

Urology: Dr. Fred K. Garvey.

Radiology: Dr. J. P. Rousseau.

EDWARD J. STIEGLITZ, M.D., F.A.C.P., announces the opening of his office, Suite 316, 1726 I street, N.W., Washington, D. C. Practice limited to Internal Medicine. Telephone: Republic 4727.

MARRIED

Dr. Addison Gorgas Brenizer, Jr., of Charlotte, N. C., and Boston, Mass., and Miss Meredith Ewing Marshall of Providence, R. I., New Year's Day.

Dr. Betty Gordon Willis, daughter of Mr. and Mrs. Hugh Hiter Willis, to Dr. Philip Carey Whitehead of Montreal, Canada, on Christmas Day, in the Presbyterian Church, Culpeper, Va., followed by a reception at the home of the bride's parents. The bride and groom are both graduates of the University of Virginia Department of Medicine. Dr. Whitehead is with a hospital staff in Montreal, and his bride is serving as interne at Gallinger Municipal Hospital, Washington.

The bride's preparatory work was done at Agnes Scott College, Atlanta, while the groom is a graduate of West Point.

Doctor Samuel Eltinge Elmore, Junior, of Charleston, and Miss May Carroll Mills, of New Orleans, December 19th.

DIED

Dr. Robert C. Bryan, 68, distinguished Richmond surgeon, former professor of anatomy and later of genito-urinary surgery in the Medical College of Virginia, and an ex-president of the Tri-State Medical Association, died at his home on Monument avenue on Christmas Eve.

Dr. J. E. Nobles, 66, life member and former president of Pitt County Medical Society, died at his home at Greenville, N. C., Dec. 13th, following several days' critical illness. Dr. Nobles was a native of Pitt and, with exception of his years of study and a brief period of practice in Vanceboro, spent practically his entire life in that county. He practiced for a short time in St. John's community and in 1900 moved to Vanceboro, where he practiced until 1902. He began his practice at Greenville in 1902, and continued until his death. For the past 20 years he has been physician for East Carolina Teachers' College.

SUPPRESSION OF LACTATION

Although unrelated chemically to the natural estrogens, stilbestrol appears to possess the same pharmacologic activity. Its therapeutic efficacy when given by mouth makes it especially useful in inhibiting lactation.

The suppression of lactation becomes a necessity when certain post-partum disease conditions develop, and because of economic or social reasons as well. Several reports have appeared which substantiate the earlier studies of this application of stilbestrol, a recent one (*Am. J. Surg.*, 54: 443, 1941) deals with an analysis of 110 cases. Over 90 per cent of these patients responded successfully to stilbestrol, without any adjunct measure. In most instances, stilbestrol was administered orally in doses of 5 mg., t. i. d., for two days.

Besides the plain tablets and ampoules of various sizes Eli Lilly and Company have marketed "Enseals" (Enteric-Sealed Tablets, Lilly) stilbestrol having a special enteric coating for timed disintegration.

WHAT IS THE MATTER WITH THE PATIENT WHO IS CHRONICALLY TIRED?

(W. C. Alvarez, Rochester, Minn., in *Jl. Mo. Med. Assn.*, Nov.)

By all means give the tired person at least one good overhauling, but also keep a sharp lookout for those common things—overwork ,neurosis, postinfective neurosis nervous breakdown, constitutional inadequacy, equivalents of insanity, actual insanity and cerebral arteriosclerosis. Physicians should learn to recognize these syndromes at a glance.



TOMMY MASON "HATES" MEDICINE

There are many "Tommy Masons"— not only boys and girls but adults as well, who really need vitamin supplements but refuse medicine. For this very reason Roche developed Cal-C-Tose. While Cal-C-Tose contains generous amounts of five essential vitamins it carries no suggestion of medication. Added to milk it makes a rich, appetizing, chocolate-flavored drink that tickles the palate of the most finicky patient. It is delicious served either as a hot chocolate or as a cold, refreshing milk-shake. In addition to vitamins A, B_1, B_2, C, and D, Cal-C-Tose contains diabasic calcium phosphate and other valuable minerals. It is packaged in 12-ounce and 5-pound containers . . . HOFFMANN-LA ROCHE, INC. • ROCHE PARK • NUTLEY, N. J.

TRY CAL-C-TOSE FOR THAT PROBLEM PATIENT

BOOKS



THE 1941 YEARBOOK OF INDUSTRIAL AND ORTHOPEDIC SURGERY, edited by CHARLES F. PAINTER, M.D., Orthopedic Surgeon to the Massachusetts Women's Hospital and Beth Israel Hospital, Boston. *The Year Book Publishers, Inc.,* 304 South Dearborn St., Chicago. $3.00.

The publications of the year just past have been read and wise choice has been made of those to be included. In both these overlapping fields of surgery the advances have been many and important. One who familiarizes himself with the contents of this book will not have missed many contributions of importance made in 1941 to the knowledge of orthopedic and industrial surgery.

BLOOD DISORDERS IN CHILDREN, by I. NEWTON KUGELMASS, M.D., Ph.D., Sc.D., Spec., Attending Pediatrician, Downtown Hospital and Pan-American Clinics. Consultant Pediatrician, Heckscher Institute for Child Health, New York City Children's Hospital, Lynn Memorial Hospital, Monmouth Memorial Hospital, Muhlenberg Hospital. *Oxford University Press,* London, New York, Toronto. 1941. $10.00.

The author undertakes to reveal the mechanism and management of disease conditions of the blood peculiar to infancy and childhood, and so to bring order out of confusion as to some phases of the subject. He lays emphasis on the fact that there are no diseases of the blood, but only diseases of its formative organs. On a solid foundation of embryology, histology and physiology is built a practical book on a certain corner of bedside medicine. The book is made up of the direct, positive statements of an author who knows well his subject and how to impart his knowledge.

THE 1941 YEAR BOOK OF GENERAL SURGERY, edited byy EVARTS A. GRAHAM, A.B., M.D., Professor of Surgery, Washington University School of Medicine; Surgeon-in-Chief of the Barnes Hospital and of the Children's Hospital, St. Louis. *The Year Book Publishers, Inc.,* 304 S. Dearborn Street, Chicago. $3.00 postpaid.

The details of some half hundred operations are given. Something like two hundred measures for use in preparing patients for operation and for taking care of them after operation are described; and more than a hundred diagnostic procedures. Nearly two hundred surgical conditions are fully covered. The 1941 surgical literature of the whole civilized world has been sifted for better means of diagnosis and treatment of disease conditions for which the

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Carolinians whose work is included in this review are Dr. Arthur Ambler, Asheville; Dr. Deryl Hart, Durham; Drs. F. E. Kredel, H. G. Smithey and I. G. Linton, Charleston.

THE LARYNGOSCOPE: Its Use in the diagnosis of common laryngeal pathology, and in examination of the pharynx and nasopharynx. *American Optical Company*, Southbridge, Mass.

This 30-page booklet is presented by the American Optical Company as a means of encouraging and instructing the general practitioner to make laryngeal examinations.

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THE MARCH OF MEDICINE. New York Academy of Medicine Lectures to the Laity, 1941. $2.00.

For 1939 and for 1940, and now for 1941 the lectures to the laity at the New York Academy of Medicine are put out in a booklet. The purpose is to show how medicine has developed, and to reveal the social and cultural significance of the profession.

The lectures in this edition discuss the relation of humanism to science, philosophy as therapy, and looking toward the future, cancer and the endocrine glands are discussed.

Every doctor would do well to familiarize himself with the contents of all three volumes.

SURGICAL PRACTICE OF THE LAHEY CLINIC. Boston, Mass., Philadelphia and London. *W. B. Saunders Company*, 1941. 897 pages with 376 illustrations. Price $10.00.

This volume is put out as a true cross-section of the work of this famous clinic: its methods, its technics, its diagnostic measures, its results.

The best in surgery of every part of the anatomy, with the exception of that in the domain of the Eye, Ear, Nose and Throat specialist, is covered exceedingly well. The subject of anesthesia is dealt with after the same manner.

Dr. Frank H. Lahey and the men with whom he has surrounded himself constitute a team whose team-work is a marvel and an inspiration to all who have come to know intimately the quality of this work. Reading this book and papers of the members as they appear is the next best thing to being an ocular and auditory witness.

A PRIMER ON THE PREVENTION OF DEFORMITY IN CHILDHOOD, by Richard Beverly Raney, B.A., M.D., Associate in Orthopaedic Surgery, Duke University School of Medicine, Attending Orthopaedic Surgeon, Watts Hospital, Durham, N. C.; in collaboration with Alfred Rives Shands, Jr., B.A., M.D., Medical Director, Alfred I. duPont Institute of The Nemours Foundation, Wilmington, Delaware, visiting Professor of Orthopaedic Surgery, University of Pennsylvania School of Medicine. Illustrated by Jack Wilson. *National Society for Crippled Children, Inc.*, Elyria, Ohio. 1941. $1.00 postpaid.

Affections of childhood prone to cause deformity are listed, each described briefly, and means of prevention given. Then deformities are taken up and dealt with in divisions according to anatomy and subdivisions according to disease process. The instruction is given in the simplest possible language consistent with plainness, and a glossary is appended for the use of those other than medical persons who stand in need of this instruction for the good of their little ones.

A very helpful dealing with a very important subject.

NEUROANATOMY, by Fred A. Mettler, A.M., M.D., Ph.D., Professor of Anatomy, University of Georgia School of Medicine, Augusta, Georgia. With 337 illustrations, 30 in color. *C. V. Mosby Co.*, St. Louis. $7.50.

The author tells us he has written to meet the needs of the medical student and to prepare him for the demands which will later be laid upon him in his clinical training, and that all dispensable material has been deleted.

The first part of the text deals with the central nervous system as seen by the naked eye, the second with the revelations made by the microscope.

Throughout, the purpose of making the work of practical usefulness to would-be doctors and those already in practice is kept in mind. The profusion of illustrations are wisely conceived and artistically executed. Dr. Mettler's powers of accurate, yet pleasing, description of things anatomical remind of no one but the great *Gray*.

REPORT OF COMPLETE RECOVERY AFTER HEART HAD STOPPED FOR 20 MINUTES

(H. D. Adams and L. V. Hand, Boston, in *Jour. A. M. A.*, for January 10th)

This was accomplished by immediate and simultaneous artificial circulation of the blood, by means of massage of the heart, and artificial respiration.

The measures must approach as closely as possible the normal physiologic cardiorespiratory sequence.

Synchronized artificial respiration associated with artificial cardiac diastole followed by artificial cardiac systole more nearly approaches this normal sequence.

The patient was undergoing an operation on the left lung when his heart stopped beating, following which heart stimulants were injected, and, as the heart was exposed artificial circulation and respiration were instituted immediately. Oxygen was supplied to the lungs by rhythmic pressure on the rebreathing bag used in administering anesthesia.

Within a few seconds after the heart resumed spontaneous rhythmic contractions spontaneous breathing started, progressing from rapid shallow respirations to rapid exaggerated respirations. Twenty-five minutes after the heart ceased beating the patient's color, which had been some-

what of a violet hue, became a livid pink and the breathing gradually quieted. For the remainder of the operation only oxygen was administered. The patient left the hospital in good condition sixty days after operation.

As for the maintenance of the circulation of the blood by rhythmic compression of the heart by hand in cases where neither the chest nor abdomen are open, a rapid exposure of the heart can be accomplished by an incision in the left chest. The influence of gravity on circulation of the blood in the brain should be considered and the patient's body tilted a few degrees with the head down.

MASSIVE ARSENOTHERAPY IN SYPHILIS

(G. W. Bowman & F. G. Sheehan, Indianapolis, in *Jl. Indiana State Med. Assn.*, Dec.)

Three decades ago, 606 was given to the world. Press publicity to the laity with its one-shot promise resulted in countless thousands of patients receiving only one injection and no other treatment for a period of years when they might or did present themselves with an advanced cardiovascular, visceral or central nervous system syphilis. Today, we are again dealing with another "quick-cure," the "5-day," treatment which the press has again prematurely acclaimed to the public.

There is fast approaching a situation in our civil and military life which may make this new treatment method highly advantageous to the general public welfare. With our Selective Service in effect and 75 per cent of our new infections occurring in this age group, many will ask for, or will be recommended for this type of therapy. With general military service many marriages will be stepped up and some of these marriage candidates will have transmissible syphilis, and will have had none or but little treatment. Also, we are now entering into the greatest migration of workmen to industrial defense activities ever experienced. The possibility of being able to use some such method of putting infectious individuals out of circulation and giving them and the general public a greater security is no mean factor.

The dangers and reactions of this method of treatment have not been conclusively estimated nor their late complications become known. The use of this method should not be encouraged among the inexperienced; it is strictly a hospital procedure and adequate hospital facilities and the assistance of full time, trained personnel is imperative. The results, so far, certainly apparently offer the most promising and safest approach in the treatment of early syphilis.

SAFETY SPECTACLES FOR THE COLOR-BLIND

(V. A. Chapman, Pasadena, in *Trans. Sec. on Oph. A. M. A.*, 1933)

The great problem of the color-blind is that of red and green, danger and safety, stop and go, signals.

For the color-blind driver it is necessary to find some one "color" which is always perceived, recognized and designated the same and identically by individuals with any type of color-blindness and by those not at all color-blind. Such a color (so-called) is black.

Black all individuals perceive alike and here all do agree and meet on a common ground. And therein lies the solution to the traffic lights problem of the color-blind.

The color-blind driver knows black every time and the black which he perceives and calls "black" is exactly the same as the black which the non-color-blind sees and names "black." If the color-blind individual can quickly and positively determine the presence or absence of red, his traffic light troubles are ended.

All that the color-blind individual has to do is to interpose between his eyes and the puzzling traffic signal a piece of "red-free" filter of glass or celluloid transparency. If the color which he can not determine stays the same as he first perceived it before interposing the red-free filter, it is not red. If it changes to black when so viewed, it is a red signal. And there you are. He is not guessing at it. He knows!

With such a pair of spectacles the color-blind driver is as safe for himself and to others as any one who wears spectacles for correction of high degree errors of refraction.

There is no need to deprive the color-blind of the driver's or pilot's license. All such an individual needs to do is confess before men and wear his special type of spectacles.

HOW TO GET INTO TROUBLE WITH FRACTURES

A doctor can get into more trouble in less time with fractures than with any other type of work. There are at least five pitfalls that the family physician or surgical specialist can get into with equal celerity.

The doctor may proceed to treat a fractured pelvis efficiently, only to discover later that the patient has also a ruptured bladder. An eminent specialist treated a fractured ulna for months before he learned that the patient had a dislocated head of the radius, on the same side.

An unconscious child was found to have a fractured skull following a motor accident. Days later the child regained consciousness, but complained of pain in the chest, where fractured ribs had been missed. One must remember always that he is treating a whole person, not merely a fracture.

Valuable as x-rays are in diagnosis, they are even more important for position and union. Neglect to have a fracture x-rayed is in itself almost ground for a malpractice suit.

One may feel that his prestige suffers when he asks for help. When a consultant is called patients are pleased and proud that their own doctor thus shows his interest in their welfare.

The American College of Surgeons published recently a small booklet on fractures for the guidance of general practitioners and surgeons. The treatment of some types of fractures is so difficult that it is only fair to the patient that he be treated by those equipped with the necessary mechanical devices and experience. Further, the final results are in some cases so disappointing that the average doctor would we well advised, from a purely selfish view, to pass them on.

The doctor who keeps no record of his findings at the time of fracture, no progress notes, no record of complications, can be sure of getting into trouble sooner or later. In a case of supracondylar fracture of the humerus, the doctor who actually writes down whether a radial pulse can be felt is likely to recognize its absence and do something about it. It is obviously desirable to have a record in writing before an anesthetic is administered or any manipulation carried out, in cases where pulse or sensation is impaired.

1. J. H. Couch, Univ. of Toronto, in *Jl. Can. Med. Assn.*, April.

CHUCKLES

"What kind of wood are matches?"
"She would and he would."

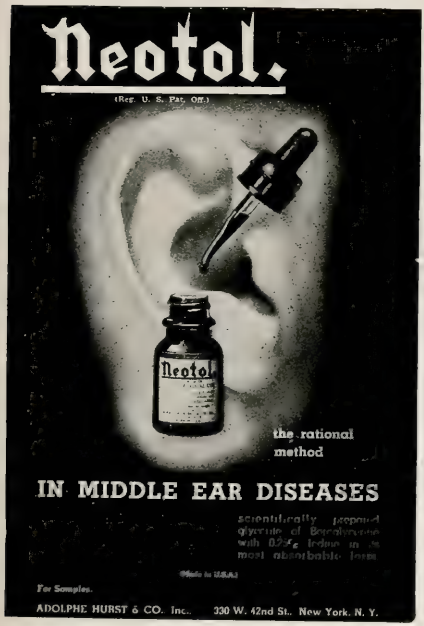
At a reception the ex-patient was asked by a widow to guess her age. "You must have some idea," she said, as he hesitated.

"I have several ideas. I hesitate whether to make it ten years younger on account of your looks or ten years older on account of your intelligence."

"If bigamy is a word meaning having two wives, what word describes having only one wife?"
"Monotony."

"Everyone is talking about the Smiths' quarrel," reported the wife. "Some are taking her part and some his."

"And," replied the husband, "I suppose a few eccentric individuals are minding their own business."





WHEN YOU GO TO NEW YORK

SEE FOR YOURSELF what War does to the humble people of England. Attend a performance of WOOKEY at the Plymouth Theatre, 45th St. west of Broadway. The Wookey is the name of a boat and is owned by Mr. Wookey in the person of Edmund Gwenn. Bombs fall and people get hurt so a doctor is there in the form of "Dr. Lewishohn" and he carries his little bag.

ENJOY AN EVENING in the quiet of old Greenwich Village where the Savoy Opera Guild holds forth in a reconditioned barn and presents many of the well known Gilbert and Sullivan Operas. Strictly a family affair with very fine voices and theatrical effects that would do any Broadway house proud. "The Gondoliers" are scheduled for January. Thursdays to Saturdays evenings. Seats limited. Cherry Lane Theatre, 38 Commerce Street, Phone Canal 6-9042.

MAKE AN APPOINTMENT with Nat Smolin, Sculptor and Lecturer. He is the founder of the first art clinic for doctors who make sculpturing and painting a hobby. First hand suggestions from a Master. Saturdays and Sundays have been set aside exclusively for members of the medical profession. Studio: 200 West 57th Street.

VISIT THE MUSEUM OF MODERN ART at 11 West 53rd Street, right off Fifth Avenue. There are constantly changing exhibitions of painting, sculpture, photography, industrial design and architecture. The Museum's Film Library draws on its collection of 6,000,000 feet of notable films of the past. These interesting programs are shown at 4 p. m. weekdays and at 2 and 4 p. m. on Sundays in the Museum's handsome, comfortable, air conditioned auditorium.

DEVOTE AN EVENING and take in some activity at THE TOWN HALL, 123 West 43rd Street. A diversified program each evening covering the arts, music, education, concert and radio forum. The Town Hall, Inc., is a non-partisan, non-sectarian educational institution, comprising six correlated departments and two co-operating clubs, working toward the advancement of democracy through a well-rounded program of adult education.

ATTEND A PERFORMANCE of "Hope for the Harvest," playing at the Guild Theater, 52nd Street west of Broadway. The Theatre Guild presents the well known couple, Frederic March and Florence Eldridge in this American Comedy by Sophie Threadwell. The critics of Boston, New Haven, Philadelphia, Baltimore, Pittsburgh, Washington and now New York have hailed this production as a "Smash Hit." It is a beautiful and inspiring play.

AND WOULD LIKE to see for yourself just what our Government is doing to make the wheels go round visit the exhibit of the "Bits and Pieces" set up by the Division of Contract Distribution, OPM, at the Chanin Building, 122 East 42nd Street. The exhibit and the publication of the "OPM Contract News" is for the purpose of stimulating subcontracting in the field of industry. Represented in the exhibit at present are more than thirty prime contractors making planes, guns, tanks and ships.

CALL ON DR. B. F. MORROW, 205 West 54th Street, and look over his collection of Etchings and Paintings. Dr. Morrow is President of the Haden Etching Club and President of the American Veterans' Society of Artists. Each year the Society exhibits material, the work of its members, unrestricted in its subject matter but selected with due regard to the varied movements it represents. The paintings, sculpture, prints and drawings are original works. Many are for sale. A permanent showing and well worth coming a long way to visit.

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JAMES M. NORTHINGTON, M.D., Editor

VOL. CIV CHARLOTTE, N. C., FEBRUARY, 1942 No. 2

Laterality Dominance In Shakespeare's Plays

Groesbeck Walsh, A.B., M.D., F.A.C.P.
Chief of the Medical Clinic, Employees' Hospital
and
R. M. Pool, A.B., M.D., F.A.C.S.
Assistant Chief Surgeon, Employees' Hospital
Fairfield, Alabama

THAT there is growing interest in laterality dominance and its relation to certain definite disease patterns a perusal of modern medical literature will make plain. That this growth is of recent date is also evident. In Gould's book on *Right- & Left-handedness* no reference can be found to the connection between the changes in handedness forced on the child and the resulting development of the common speech defects described as stuttering and stammering. This work was published in 1908.

Even in Parson's book *Left-handedness,* which was brought out in 1924 this sequence of events is treated as a theory which remains to be proven. Such, certainly, are not the views held at the present time. We find that the base on which such ideas have been founded is being broadened as time goes on. There is tendency to place other sickness patterns under suspicion as having a similar etiology. Among them, enuresis, various types of strabismus, and in the English literature there are several references to the connection between tuberculosis and mancinism. Just how much actuality exists in these ideas remains to be seen. As the psychogenic origin of various forms of sickness receives increased attention it is likely that laterality dominance and its implications will be studied with reference to many of the symptoms which we now lay at the threshold of the autonomic nervous system.

That criminal tendencies have been connected with enforced changes in laterality dominance carried out against children is of course well known. That left-handedness has been viewed for centuries as something more than a personal idiosyncrasy, something to be avoided and corrected at any cost, has been a matter of remark to all who have interested themselves in the matter. There is a quotation in Parson's book which we think well worthy of observation. It is taken from one of the newspapers of that day.

> Elizabeth, New Jersey November 20, 1922
> An intensive campaign to cure left-handedness among pupils in local schools here has resulted in a reduction from 250 to 66 since 1919.

Though the methods of cure are not detailed we may well imagine that they took the established route of forcible restraining of the left hand, command, ridicule and other means which we would look upon today with abhorrence. Just what were the motivations which connected sinistrality with much of what is undesirable in human conduct? Why were adults so anxious to remove such stigmata from children at as early an age as possible?

That such beliefs were widespread and acted upon with tyrannical vigor there is no room for doubt. That there is a connection in the minds of the masses of people between right-handedness and righteousness is very evident. From a reading of the Bible we have gathered the impression that this source must be one of the most convincing origins of this concept. Particularly is this found to be so in the books of the Old Testament. In these chapters the right hand is glorified with concomitant deprecation of the left; and this distinction by no means confines itself to the hand alone, but by the ancient Hebrews included all the dexter side of the body. We have repeated so often the words, "If thy right eye offend thee pluck it out," that we have grown callous to the intimation that the *right* eye was mentioned as being the more precious of the two eyes, as indeed it was so viewed. This selection made the command all the more imperative and binding. If the books of the Old Testament did not contain so much historical narrative it becomes evident that such advices would have been even more frequently encountered in its pages.

In the Psalms alone, which are not in any sense historical commentaries, but philosophical discussions, distinction enjoyed by the right hand is brought out some two-score times. In fact the connection between right-handedness and righteousness is brought out with such constant reiteration that it might be viewed as one of the tenets of the ancient Jewish faith. Our consideration broadened itself to an analysis of the plays of Shakespeare. This was a natural progression. Henry Simon, in his preface to an edition of the plays entitled *Shakespeare a Teller of Stories*, makes this plain. Speaking of the characters there found he says:

"They represent to the western world a statement of the problems of mankind in a form more vital than books on moral or psychological theory; they are our folk literature. To us they are what Homer was to the Athenians, a sort of race wisdom, a bible without the official sanction and supernatural origin accorded it by a church."

While it is true that not many of the mass of English-speaking people have read Shakespeare's plays, still the number is larger than is commonly supposed. Moreover such reading has been undertaken by those types which have led in establishing cultural levels, in the making of laws and in the determining of just what is considered good and bad for the rest of humanity to do. The English dramatist who lived centuries ago has had more to do with guiding our thoughts and forming or reinforcing our prejudices than we would be willing to believe. With all of us his words have had great weight.

That he was aware of the biblical concept of the superiority of the right hand is evident in his work. Nowhere can be found any extension of this idea so that it embraced the entire right side of the body as we find in the scriptures; but the germ of the idea is there nevertheless and he shows full acceptance of the thought. Like the master dramatist that he was he uses it but sparingly but as we hope will be evident he uses it for a wide variety of purposes. In his thirty-seven plays, the indication of laterality dominance appears some twenty-odd times, in not a single instance is such a reference wasted. As we will see, with his remarkable prescience he never makes a misapplication of the thought. We say that his acceptance was complete and it was, in that he never made such a comparison, and every instance of course is a comparison, without deprecating what was sinistral.

While the references to laterality dominance in Shakespeare are neither lengthy, frequent nor reiterative, no one could question their orthodoxy. From first to last and throughout all manners of application which come to his hand he is as positive as were the ancient Hebrews in the glorification of the dexter side of the body and the condemnation of the sinistral. Never does he effect this by edict but by indirection. The sense of his conclusions are, however, unescapable.

When he has a choice to make he does it with finesse, and apparent indifference, but when the totals are added up it is found that his choice has always been the same. The right hand has won. Around the left hand and the left side of the body the dramatist encounters an aura of evil. He makes this discovery plain on several occasions and uses it for the consummation of his dramatic purpose. Indeed all his references to sidedness are woven into the substance of the story and are used to add to the atmosphere of righteousness, or of its antithesis. If we did not read the text with the utmost care the cadences of the author's beliefs in this field might escape our attention.

In all the nuances which are cast about this expression of opinion, we find him constant to an ideal which we are confident stems from his knowledge of the Bible. On this latter phase of the subject volumes have been written. Suffice it is to say in the pages of Richmond Noble's *Shakespeare's Biblical Knowledge* is found the statement that in his various dramas the author made identifiable quotations from or allusions to forty-two books of the Bible—eighteen each from the New and Old Testament and six from the Apocrypha. In these dramatic studies which we have reviewed are found the biblical estimations as to the relative values of the two sides of the body. The method of treat-

ment is different. The end results are the same. So far as the study of laterality dominance is concerned Shakespeare has acted as an orthodox disciple. Though he has acted his part as a dramatist it may be that on that account his allusions have been all the more compelling. To him, right and righteousness are as synonymous as they were in the days of Abraham.

Shakespeare's references to the superiority of the right hand fall into several parts. The simpler and more direct allusions are brought into the narrative for the purpose of achieving a purpose. In the first one quoted, the intent is to settle for all time the place which Claudio is presumed to hold in regard to his patron. After one character has been described as the "right hand" of another, there is very little that can be added thereto. Even the envious Don John pretends to bow to the popular verdict.

Reference to laterality dominance as found in *Much Ado About Nothing*, Act One, Scene Three; Enter Borachio.

Don John What news Borachio?

Borachio I came yonder from a great supper; the prince your brother is royally entertained by Leonato; and I can give you intelligence of an intended marriage.

Don John Will it serve for any model to build mischief on? What is he for a fool that betroths himself to unquietness?

Borachio *Marry, it is your brother's right hand.*

Don John Who? the most exquisite Claudio?

Borachio Even he.

Don John A proper squire. And who and who? which way looks he?

Borachio Marry on Hero, the daughter and heir of Leonato.

The soul of Valentine is riven by the treachery of his friend Proteus in *Two Gentlemen of Verona.* What can be expected in a world when perfidy is able to extend itself throughout the entire holy right arm into the very heart itself? When the dexter side is betrayed what is there left to live for?

Two Gentlemen of Verona, Act Five, Scene Four.

Valentine has just discovered the villainy of Proteus.

Valentine Thou common friend that's without faith or love.
For such is a friend, now, treacherous man.
Thou hast beguiled my hopes, naught but mine eye
Could have persuaded me. Now I dare not say
I have one friend alive; thou wouldst disprove me.
Who should be trusted, now when one's right hand
Is perjured to the bosom? Proteus
I am sorry that I must never trust thee more
But count the world a stranger for thy sake.

In a more judicial manner but with equal conviction King Philip addresses the citizens of Angier, assembled upon the walls of their city. His words indicate that the French people bestowed the same homage upon the dexter side of their bodies as did the English.

The Life and Death of King John, Act Three, Scene One:

King Philip is speaking before the walls of Angier.

King Philip When I have said make answer to us both
Lo in this right hand whose protection
Is most divinely vowed upon the right
Of him it holds, stands young Plantagenet.

In the play *Henry the Eighth* it is of interest to read the stage instructions for the grouping of the characters. They run as follows: Act One, Scene Two.

The King takes his seat. The Lords of the Council occupy their several places. The Cardinal places himself under the King's feet at his *right side.* (The Council Chamber.)

The stage director took it for granted that the astute Cardinal would be aware of the virtues of the dexter side and would be content with his arrangements. That the Cardinal had such knowledge is apparent in his so-oft-quoted advice to Cromwell. There would have been mental turmoil and revolt in many of our school-rooms a generation ago if the churchman had advised Croswell to carry peace in his sinistral hand.

Henry the Eighth, Act Three, Scene Two:

Cardinal Wolsey is speaking.

Cromwell I charge thee fling away ambition
By that sin fell the angels; how can man then,
The image of his Maker, hope to win by it?
Love thyself last; cherish those hearts that hate thee;
Corruption wins not more than honesty.
Still in thy right hand carry gentle peace.
To silence envious tongues; be just and fear not.

When the great Warwick wishes to reinstate himself in the favor of his partisans, and Richard in particular, he does not hesitate in his choice of laterality selection. It is in keeping with all the advices of history with which he could ever have become acquainted. The reference of Richard to Clifford betrays the intensity of his hatred. For two hours in which to indulge it the humpback is willing to give up his most precious possession by his own act. It is interesting to note how Alcibiades concurs. The right arm of the warrior is that with which he purchases his own time, for whatsoever purpose in whatever age he lives.

References to Laterality Dominance found in the Third Part of *King Henry the Sixth,* Act Two, Scene One:

Richard 'Twas odds belike when valiant Warwick fled.
Oft have I heard his praises in pursuit
But ne'er till now his scandal of retire.

Warwick Nor now my scandal Richard dost thou hear:
For thou shalt know this strong right hand of mine
Can pluck the diadem from faint Henry's head
And wring the awful sceptre from his fist
Were he as famous and as bold in war
As he is famed for mildness, peace and prayer.

Act Two, Scene Six:

Richard When Clifford cannot spare his friends an oath
I know by that he's dead; and by my soul
If this right hand would buy two hours of life,
That I in all despite might rail at him
This hand should chop it off and with the issuing blood
Stifle the villain whose unstanched thirst
York and young Rutland could not satisfy.

Laterality Dominance in *Timon of Athens,* Act Three, Scene Five:

Alcibiades is protesting against the banishment of Timon

Alcibiades Hard fate! he might have died in war
My lords if not for any parts in him
Though his right arm might purchase his own time
And be in debt to none—yet, more to move you
Take my deserts to his and join 'em both.

Laterality Dominance in *Julius Caesar,* Act Five, Scene One:

The Plains of Philippi. The armies are drawn up for the impending struggle.
Enter a Messenger

Messenger Prepare you generals;
The enemy comes on in gallant show;
Their bloody sign of battle is hung out
And something to be done immediately.

Antony Octavius lead your battle softly on
Upon the *left hand of the* even field.

Octavius Upon the *right hand I; keep thou the left.*

Antony Why do you cross me in this exigent?

Octavius I do not cross you; but I will do so.

It is evident that both generals subscribed to the ancient views on handedness. Not only subscribed, but were willing to risk a quarrel in the face of the enemy, to profit by it at the expense of a companion. It is of significance that Octavius, by far the stronger personality, had his way of the wastrel Antony. The scene would have lost strength and its proper evidence of finality had Caesar acquiesced in Antony's demands.

Menenius is anxious to serve the aims of his friend, Coriolanus. Particularly is he interested in the elevation of Coriolanus to the consulship. The two tribunes, Sicinius and Brutus, have not proven sympathetic. Menenius wishes their support but he is not adverse to requesting the two tribunes to take the beams out of their own eyes. When he wishes them to know who are their greater critics he speaks in an idiom which requires no translating for them, O' the right-hand file" refers to the patrician element in Rome, a party with a long arm and peradventure a long memory also.

Laterality Dominance in *Coriolanus,* Act Two, Scene One:

Enter Menenius with the two Tribunes, Sicinius and Brutus.

Menenius In what enormity is Marcius poor that you two have not in abundance?

Brutus He's poor in no one fault, but stored with all.

Sicinius Especially in pride.

Brutus And topping all others in boasting.

Menenius This is strange now; do you two know how you are censured here in the city, I mean of us *o' the right-hand file? do you?*

Both Why are we censured?

Menenius Because you talk of pride now.

When Shakespeare brings in the left side of the body, something unfortunate is in the offing. The author handles the subject with consummate art. While he uses the word sinistral only a single time in all his plays, he is able to substitute an atmosphere for a word with such skill that the effect produced is more suitable to his ends than if he had been more literal. As will be seen from the following quotations he has turned from the bright world of the right to the shadows of a left-sided world. If we admit that he bows to an old world tradition we must also allow that he is unerring in his touch. If we substitute in our own minds and with our own tongues right for left and left for right, and repeat to ourselves the lines we have quoted and those about to be so observed, we will find that the life has gone out of the text. This will be true no matter of how open a mind we may take ourselves to be in the matter.

To create the proper atmosphere of righteousness and unrighteousness it was inconceivable that Shakespeare should vary from the biblical formula. To have done so would have been to impair his value as a playwright and as a philosopher as well. When Pyramus decided on his deed of self destruction he might have done so without indulging in any anatomical details. His creator would not have it so. To name the side wherein the knife was to be plunged added as he well knew one more item to the horrible scene. He need never have brought this about. We think that it is a part of his art that he did so.

A Midsummer Night's Dream, Act Five, Scene One:

Pyramus about to kill himself.

Pyramus Come tears confound;
Out sword and wound
The pap of Pyramus;
Ay, that left pap,
Where heart doth hop; (stabs himself)
Thus die I—thus, thus, thus.
Now am I dead,
Now am I fled;
My soul is in the sky,
Tongue lose thy light,

Moon take thy flight, (exit moonshine)
Now die, die, die, die, die (dies).

One of the most striking episodes in Shakespeare's use of handedness occurs in *Cymbeline*. Posthumus wedded to the King's daughter, Imogene, is banished. He journeys to Rome. Here he meets Iachimo, who dishonors all women in his talk. Posthumus, ill-advisedly, is led to wager that Imogene is inviolable. Iachimo hastens to England and is carried into the bed chamber of Imogene hidden in a trunk. He emerges therefrom while Imogene is sleeping. He determines to memorize the scene so that he can convince Posthumus of the success of his attempt when he meets him in Rome.

The final mark of identification, and the most intimate and most striking one, is the mole on the left half of Imogene's body. We know even without being told that this was the thing that clinched his story to truth. It is obvious that no one could have invented this finding; neither could one have overlooked such a blemish on a beautiful body. Again we repeat the side might haev been left undetermined. The author's intelligence forbade such an omission. He was aware that his audience would expect him to consummate the relation of an act wholly evil by placing the evidence on the ill-omened side of the victim. Later, when Iachimo proves to Posthumus' satisfaction that he has seduced his wife, he speaks of the mole as the *stain* it might well be, located as it was.

Act Two, Scene Two:

Iachimo has made his way into Imogene's bedroom and is watching her after she falls asleep. He intends to take away with him what is necessary to prove to her husband, Posthumus, that she has been unfaithful to him.

Iachimo emerging from the trunk in which he has been carried into Imogene's bedroom, unknown to her.

Iachimo To note the chamber I will write all down
Such and such pictures, there the window; such
The adornment of her bed; the arras figures
(He removes her bracelet)
As slippery as the Gordian knot was hard,
'Tis mine; and this will witness outwardly
As strongly as the conscience does within
To the madding of her lord. *On her left breast*
A mole cinque-spotted like the crimson drops
I' the botom of a cow slip, here's a voucher
Stronger than ever law could make; this secret
Will force him think I have pick'd the lock and ta'en
The treasurer of her honour. No more. To what end?

The location of the mole on the left side assists in the consummation of an evil act.

Act Two, Scene Four:

Iachimo proves to Posthumus that he has been in Imogene's room.

Iachimo If you seek
For further satisfying, under her breast
Worthy the pressing—lies a mole, right proud
Of that most delicate lodging; by my life
I kissed it. You do remember
This stain upon her

Henry the Sixth, Part Three, Act Three, Scene One:

King Henry VI My queen and son are gone to France for aid;
And as I hear the great commanding Warwick
Is thither gone to crave the French king's sister
To wife for Edward: if this news be true,
Poor queen and son your labor is but lost;
For Warwick is a subtle orator,
And Lewis a prince soon won with moving words.
. . . . . .
Ay but she's come to beg; Warwick, to give;
She on his left side craving aid for Henry,
He on his right asking a wife for Edward.
She weeps and says her Henry is deposed;
He smiles, and says his Edward is install'd;
That she, poor wretch, for grief can speak no more:
Whiles Warwick tells his title, smooths the wrong,
Inferreth arguments of mighty strength,
And in conclusion wins the King from her.

When poor abandoned Henry the Sixth reaches the nadir of his fortunes he never forgets for a moment, as indeed how could he, the fates which pursue the dextral and the sinistral. All that he loved had gone to France to plead his cause. He believed this to be a right and true one. Yet in his mind's eye in far-off England he could see not only the struggle that was about to ensue in France for the aid of the French King but he could see also the relative positions of the two contenders, his wife and Warwick. That he had not a doubt as to the outcome is plain in the exchanges.

That he had the two opponents in their proper places for the termination of the struggle is made obvious from his own words. Shakespeare's characters were well drilled by their creator in the world of sidedness. Search as one will, there is never a mistake made.

Laterality Dominance References in *A Comedy of Errors*, Act Three, Scene Two:

Dromio S. is explaining his adventures in the kitchen to his master.

Ant. S. Dromio has just encountered his brother's wife, who claimed him as her husband.

Ant. S. Where stood Belgia the Netherlands?

Dromio. S. Oh sir I did not look so low. To conclude this drudge or diviner laid claim to me; called me Dromio; swore I was assured to her; told me what privy marks I had about me, as the mark of my shoulder, the mole

in my neck, *the great wart on my left arm,*
that I amazed ran from her as a witch.

A wart is a repulsive thing. It was never wanted by human kind. It sets aside the portion of the body where it flourishes as an undesirable terrain. It is by many thought of as something repulsive, something batrachian. Well do we know that the astute author would never have found such a mark on the right arm of his devoted Dromio. Had it been so we feel it never would have been brought to light.

Casca is selected to narrate to Cicero the horrors of that night in Rome. So upset is he that he walks with naked sword in hand. He has passed through experiences unequalled in all his life in the capital. He has seen presented a succession of horrors, natural and supernatural, and he is profoundly affected, alarmed. It seems to him that forces of evil are abroad threatening the lives of all about him. The very wild beasts are withdrawn from their natural pursuits. But despite all the evils of the night he can not forbear informing Cicero that the common slave, "you know him well by sight" (that clinched the horror) held up his *left hand* to flame and burn. Shakespeare well knew how to sustain the goose flesh on the persons of his listeners. Had he changed sides in this instance there would have been a feeling that at least the worst was over. But the selection of the ill-omened hand carried out the scheme of an all-pervading evil. The common slave had done all he was able to add to the situation.

Julius Caesar, Act One, Scene Three:

There has been a terrible storm that night in Rome. Casca with his drawn sword meets Cicero on the street. He is describing his experiences to Cicero.

Casca Are not you moved when all the sway of earth
Shakes like a thing unfirm? O Cicero!
I have seen tempests, when the scolding winds
Have rived the knotty oaks; and I have seen
The ambitious ocean swell and rage and foam,
To be exalted with the threat'ning clouds;
But never till tonight, never till now
Did I go through a tempest dropping fire.
Either there is a civil strife in heaven.
Or else the world, too saucy with the gods,
Incenses them to send destruction.

Cicero Why saw you anything more wonderful?

Casca A common slave, you know him well by sight,
Held up his left hand, which did flame and burn
Like twenty torches join'd; and yet his hand,
Not sensible of fire remained unscorch'd.
Besides, I have not since put up my sword,
Against the Capitol I met a lion,
Who glar'd upon me, and went surly by,
Without annoying me; and there were drawn
Upon a heap a hundred ghastly women,
Transformed with their fear, who swore they saw
Men all in fire walk up and down the streets.

Laterality Dominance References in *A Comedy of Errors,* Act Two, Scene Two:

Adriana has just met Antipholus S., whom she has mistaken for her husband. She upraids him for his neglect of her, for his unfaithfulness to her.

Adriana How dearly would it touch thee to the quick,
Should'st thou but hear I were licentious,
And that this body, consecrate to thee,
By ruffian lust should be contaminate!
Would'st thou not spit at me, and spurn at me,
And hurl the name of husband in my face,
And tear the stain'd skin off my harlot-brow,
And from my false hand cut the wedding ring,
And break it with a deep-divorcing vow?
I know thou canst; and therefor see thou do it.
. . . . . .

Ant. S. Plead you to me fair dame? I know you not:
In Ephesus I am but two hours old,
As strange unto your town as to your talk.

The rage of Adriana is brought to a climax by the reference to her wedding ring. Well did the author know, and well did his puppet know, also, that on the bringing forth of these explosive lines the minds of the audience would turn at once to the realization that the wedding ring is worn on the left hand.

Indeed we can have no doubt but that this allusion with its ill-omened implications was brought forth for this very purpose. It adds a tang to the situation which could never have been arrived at by an appeal to anything dextral.

Shakespeare obtains his effects as to the curse of sinistrality sometimes by an oblique approach. One in which the word left is never uttered by any of the characters engaged. It becomes all the more effective in his skillful hands. What could be more heart-searching than the words in the rhymes uttered by the Bastard? To admit in public one's illegitimacy did yet cling to it as a means of advancement. His mother's seduction itself is touched upon with a hint of ribaldry. The very harshness of the primitive expressions adds its part to create an atmosphere poignant yet degrading. Well in keeping we can assure ourselves with a something "a little from the right."

The Life and Death of King John, Act One, Scene One:

King John has just knighted Philip the Bastard, son of Sir Robert Faulconbridge's Lady, and has renamed him "Sir Richard and Plantagenet."

Bastard Brother by the mother's side, give me your hand:
My father gave me honour, yours gave land.
Now blessed be the hour by night or day,
When I was got, Sir Robert was away!

Queen Elinor The very spirit of Plantagenet!
I am thy grandam Richard; call me so.

Bastard Madam, by chance, but not by truth; what though?
Something about, *a little from the right,*
In at the window, or else o'er the hatch:
Who dares not stir by day must walk by night,

And have is have, however, men do catch.
Near or far off, well won is still well shot,
And I am I, howe'er I was begot.

In the room in the Garter Inn when Sir John Falstaff finally loses all patience with Pistol the eternal amenities are still preserved. Even in his rage and extremity Sir John remembers that when he separated himself, temporarily let us hope, from the fear of God, he complimented his evil deed by deserting this entity on the left hand. To have done otherwise would have destroyed faith in the omniscience of his creator.

The Merry Wives of Windsor, Act Two, Scene Two:

Falstaff is speaking to Pistol.

Falstaff Reason, you rogue, reason: think'st thou I'll endanger my soul gratis? At a word, hang no more about me, I am no gibbet for you: go. A short knife and a thong! To your manor of Pickt-hatch! go. You'll not bear a letter for me, you rogue! you stand upon your honor! Why, thou unconfinable baseness, it is as much as I can do to keep the terms of my honor precise. I, I, I myself sometimes, leaving *the fear of God on the left hand, and hiding mine honor in my necessity,* am fain to shuffle, to hedge and to lurch; and yet you, rogue, will ensconce your rags, your cat-a-mountain looks, your red-lattice phrases, and your bold-beating oaths under the shelter of your honor. You will not do it, you!

Pistol I do relent what would thou more of man?

Shakespeare lived in a day when warfare was largely a matter of direct contact. You attacked with sword and spear or were the object of such attentions. It was a right-handed world. From this side came the strokes and wounds, and perforce the left side of the recipient's bodies bore the marks thereof. The dramatist gives evidence of this knowledge on several occasions. He makes it apparent that such knowledge was widely held in epochs as separated in point of time as those described in *Julius Caesar* and in *All's Well That Ends Well.* In each instance the detail seems to be brought out automatically. It would appear that he could not err in his observations that touched upon this.

Coriolanus, Act Two, Scene One:

Volumnia the mother of Coriolanus is discussing with Menenius the aspirations of her son to the consulship. The conversation takes place in the presence of the two Tribunes who can influence the choice. Menenius wishes to make the most of the heroic career of his friend and the injuries he received while fighting for his country. In this aim the mother joins.

Menenius Where is he wounded?
(To the Tribunes) God save your good worships, Marcius is
Coming home; he has more cause to be proud.
Where is he wounded?

Volumnia *I' the shoulder and i' the left arm;*
there will be large cicatrices to show the people
when he shall stand for his place. He received
in the repulse of Tarquin seven hurts i' the
body.

Caesar we well know, arose to power through a long and active military life. He has informed us himself that more than once he led the hand-to-hand combat. He lived in a right-handed world. His opponents were so gifted. Somewhere, somehow, one of them had struck him on the left side of the head and impaired his hearing.

Julius Caesar, Act One, Scene Two:

Caesar queries Mark Antony for unheeding approaches on the wrong side to whisper what he knows.

Caesar (to Antony)
Come on my right hand, for this ear is deaf,
And tell me truly what thou thinkst of him.

All's Well That Ends Well, Act Four, Scene Five:

Bertram, Count of Rousillon, has returned from the wars. He enters to the far side of the room while the Clown is addressing Bertram's Mother the Countess.

Clown Oh madam, yonder's my lord your son with a patch of velvet on 's face; whether there be a scar under it or no the velvet knows; but 'tis a goodly patch of velvet; *his left cheek is a cheek of two pile and a half, but his right cheek is worn bare.*

Lafeu A scar nobly got, or a noble scar, is a good livery of honor; so belike is that.

Clown But it is your carbonadoed face.

Lafeu Let us see your son I pray you. I long to talk with the noble young soldier.

The author's unerring hand places the scar where it belongs. Also it is a scar, a blemish, a relic of punishment, of inferiority. It is meet that it should be found on the left side. Lafeu is quick to grasp the Clown's intimation that Bertram has suffered a deformity.

In the Same, Act II, Scene I:

The King's Palace. Bertram and Parolles are saying farewell to certain young lords who are leaving for the Florentine War.

Bertram I grow to you, and your parting is a tortured body.

First Lord Farewell, captain.

Second Lord Sweet Monsieur Parolles!

Parolles Noble heroes, my sword and yours are kin. Good sparks and lustrous, a word, good metals; you shall find in the regiment of the Spinii one Captain Spurio, *with his cicatrice, an emblem of war, here on his sinister cheek;* it was this very sword entrenched it; say to him, I live, and observe his reports for me.

First Lord We shall noble captain.

It is probably no more than a coincidence that the two references to scars on the human face from sword wounds should both occur in this one play.

Laterality Dominance in *Troilus & Cressida,* Act Five, Scene Five:

The news of the slaying of Patroclus by Hector has just been spread abroad.

Nestor Go, bear Patroclus' body to Achilles;
And bid the snail-pac'd Ajax arm for shame.
There is a thousand Hectors in the field;
Now here he fights on Galathe his horse,
And there lacks work; anon he's there afoot,
And there they fly or die, like scaled skulls
Before the belching whale; then is he yonder,
And there the strawy Greeks, ripe for his edge,
Fall down before him like the mower's swath:
Here, there, and everywhere, he leaves and takes
Dexterity so obeying appetite
That what he will he does; and does so much
That proof is called impossibility.

We might hesitate to include this dissertation of Nestor's as an example of laterality dominance. Nowhere else in Shakespeare's plays have we found dextrality and sinistrality set the one against the other. Nowhere else that is, save once again in this same play. We can not help but feel that he referred to Hector's right-handed use of the sword and not alone to his adroitness in the art of slaying.

Not every one of Shakespeare's references to laterality dominance follows the biblical concept in its entirety. They are pursued so far as the main theme is concerned. That is in complete recognition of the rightfulness of the right side and reprehensible properties of the left. So far so good. The author is just as convinced and convincing in this respect as is any one of the Hebrew Patriarchs. But in one of the minor nuances he bows to the chivalric concept entertained in theory at least in his day and time, the glorification of womankind and the immediate bestowal upon that sex of superiority. If he did this in the course of a laterality comparison he would invariably place the woman, wife or mother on the right side, and so indeed he does—successfully in one instance from *Troilus & Cressida,* unsuccessfully but with self recrimination in a passage from *Two Gentlemen of Verona.*

Laterality Dominance in *Troilus & Cressida,* Act Four, Scene Five:

Hector is explaining why he will fight no more with Ajax because the latter is his father's sister's son (Hector's first cousin).

Hector Thou art, great lord, my father's sister's son,
A cousin-german to great Priam's seed;
The obligation of our blood forbids
A gory emulation 'twixt us twain.
Were thy commixtion Greek and Trojan so,
That thou couldst say 'This hand is Grecian all,
And this is Trojan; the sinews of this leg
All Greek, and this all Troy; my mother's blood
Runs on the dexter cheek, and this sinister
Bounds in my father's'; by Jove multipotent,
Thou shouldst not bear from me a Greekish member
Wherein my sword had not impressure made
Of our rank feud. But the just gods gainsay
That any drop thou borrow'dst from thy mother,
My sacred aunt, should by my mortal sword
Be drained! let me embrace thee, Ajax.

Troilus & Cressida is commonly presumed to have been written about 1602. It was not one of the earlier plays. Neither was it one of the later ones. If it is true, as we believe it to be, that this is one of the two instances in which Shakespeare uses dextrality and sinistrality as distinct and discrete definitions, it was not because he did not have ample opportunity to repeat this device later. Indeed it is in the tragedies—*King Lear, Macbeth, Coriolanus*—that he could have found ready application for such language. He did not do so. Nor can we recall any earlier use of the expression under discussion.

References to Laterality Dominance found in *Two Gentlemen of Verona,* Act Two, Scene Three:

Launce (Speaking of Crab, his dog).
He is a stone, a very pebble stone, and has no more pity in him than a dog; a Jew would have wept to have seen our parting: why my grandam, having no eyes, look you, wept herself blind at my parting. Nay, I'll show you the manner of it. *This shoe is my father; no, this left shoe is my mother; nay that cannot be so neither; yes, it is so, it is so; it hath the worser sole. This shoe, with the hole in it, is my mother, and this my father.* A vengeance on 't!

Launce had nothing of the heroic Hector about him. When the great Trojan started out to honor a mother by placing her on the coveted or right side of the picture he was indomitable about it. Poor Launce tried to achieve the same chivalric end and failed. With one it was a human cheek and with the other it was a matter of an abandoned shoe. The background sets off the essential difference in the two characters. And yet Launce comes to his final conclusion only after much self-reproach, he is finally driven to the dishonor of his mother by setting her down as the owner of the shoe with the hole in it. Yet he is consistent, yet upset—a vengeance on it says he.

About 2,350,000 babies were born in the United States in 1940, the highest number since 1930. The increase lifted the national birth-rate from 17.3 to 18 live births per thousand of population. From a rate of 24.2 in 1921 the rate continuously declined to its lowest point (16.5) in 1933. The long-range tendency is still downward, the present rise resulting from the fact that babies born from the greatly increased volume of marriages following the first World War are now coming into reproductive ages.—*The Diplomate.*

The Gases In The Atmosphere As Therapeutic Agents*

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Historical

THE primary reason for breathing was not discovered for 2,000 years. It has long been recognized that air is necessary to life for we are told that Elisha restored to life the son of a Shunamite woman by breathing into the mouth of the child. However, scientists still agreed that the object of breathing was to cool the fiery heart. In 1666 a young Englishman, Robert Boyle, made this revolutionary statement:

"The schools teach the air to be a warm and moist and consequently a simple and homogeneous body. Our atmosphere, in my opinion, consists not wholly of pure aether . . . . but . . . . of numberless exhalations of the teraqueous globe . . . . The difficulty we find in keeping flame and fire alive . . . . without air renders it suspicious that there may be dispersed through the rest of the atmosphere some odd substance, either of a solar, astral, or other foreign nature; on account of where of the air is so necessary to flame."

In 1628 William Harvey showed that the heart circulated blood and in 1670 Mayo found that the dark blue blood in the veins became changed into a scarlet red blood in the arteries. He guessed that something of a precious nature was taken up in the lungs which he called the Nitro-Aerial spirit.

Five years later Joseph Priestly reported the first account of the preparation of oxygen. Having heated the red oxide of mercury, he noticed that a substance came off which was of special value. His democratic views on government made it impossible for Priestly to be accepted into fellowship in the Royal Society. In fact the house in which he lived in Birmingham was burned and finally, forced to leave England, he came to America in 1795. He lived not far from Philadelphia where he died. His remarks on his "good air" are characteristic of his engaging personality.

"My reader will not wonder that, having ascertained the superior goodness of dephlogisticated air by mice living in it, and the other tests above mentioned, I should have the curiosity to taste it myself . . . I have gratified that curiosity by breathing it, drawing it through a glass syphon, and by this means I reduced a large jar full of it to the standard of common air, but I fancied that my breath felt peculiarly light and easy for some time afterwards. Who can tell but that in time this pure air may become a fashionable article in luxury. Hitherto, only two mice and myself have had the privilege of breathing it."

However, Priestly ultimately failed to understand what he had found, calling this newly isolated gas "dephlogisticated air", in other words, air from which the phlogiston or the spark which was thought necessary for combustion had been removed. In the meantime, another Englishman, Joseph Black, had mentioned carbon dioxide but it was the brilliant French scientist Lavoisier who, during the years 1775 to 1794, laid down the fundamental principles of breathing. He demonstrated that oxygen is absorbed through the lungs, that when we exhale carbon dioxide and water are given off, and that an inert substance, nitrogen, is left. He proclaimed that oxygen is burned in the body in a manner very similar to the way fire burns material outside the body. Lavoisier's study of an accessory form of respiration—perspiration—was cut short by the guillotine in 1704.

The discovery of oxygen excited physicians all about and in 1800 Thomas Beddoes established a pneumatic institute at Bristol where he gave inhalational treatments of oxygen for heart disease and asthma. He made breathing bags and face pieces of oiled silk but the technique of administering oxygen was far from adequate to give him the success that he hoped for. Furthermore, he used oxygen for the treatment of melancholia and many other illnesses of which he was not justified in expecting a favorable result.

Indications for Oxygen Treatment in Pneumonia

Oxygen treatment is indicated long before the patient becomes at all cyanotic, on the development of rapid pulse, shortness of breath, restlessness, sleeplessness, delirium, anemia, persistent cough, distention of the abdomen and even a very high fever. If the disease process is not readily controlled by chemotherapy, oxygen treatment is often advantageously begun on the second or third day of disease. Signs of imminent failure of circulation or respiration generally mean that the time when oxygen could have done good has passed. Investigators have found that patients whose arterial blood contained little oxygen had a higher

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death rate. In a group of cyanotic patients treated with oxygen the mortality rate was less than in a similar group not treated with oxygen. In many cases of severe pneumonia life has been prolonged by inhaling 50-per cent oxygen. Abrupt withdrawal of the oxygen tent precipitated failure of the respiration and circulation, and the readministration of oxygen restored adequate respiration and circulation.

Oxygen treatment of persons with pneumonia usually brings slowing of the pulse rate, decrease or disappearance of the bluish color, improvement of mentality and better sleep. Blood examination shows an increase of oxygen. Usually breathing improves and in a third of the cases the rate is decreased. In some cases the temperature is slightly lowered.

The Type of Oxygen Treatment

Residence in an oxygen room is the ideal method; but this is to be had in only a few hospitals and the expense is great. The air-conditioned, well ventilated oxygen tent, with completely transparent pliofilm canopy is the best means of administering 50-per cent oxygen effectively and comfortably. This apparatus can now be used in hospital and in home and the cost of oxygen-tent therapy is only moderately greater than of oxygen by catheter in nose or by mask. Catheter in nose may be utilized for concentrations of 40 to 50 per cent, and is the preferred method when expense is to be considered. The newer oxygen masks which contain a rebreathing bag (or a collecting bag for oxygen) are especially valuable in the administratiton of oxygen concentrations between 50 and 100 per cent. They are economical and are satisfactory for many. However, half the users complain of the attachment of the mask to the face when employed over many days. Care in the application of the mask may reduce this percentage. When such complaint is made, resort to the tent is indicated.

In certain complications of pneumonia, such as acute abdominal distention or shock or marked oxygen deficiency, the inhalation of pure oxygen may be used until the critical disturbance is over. In the tent with transparent windows claustrophobia is only rarely observed. When the weather is warm or humid the dry cool atmosphere in the ventilated tent increases heat elimination and promotes comfort. The oxygen tent has frequently been used without knowing the concentration of oxygen in the contained atmosphere. It is easy to regulate the rate of flow of oxygen through a calibrated gauge. However, leaks may develop and result in the patient getting only a fraction of the amount of oxygen to be read on the gauge. The oxygen concentration should be tested by a skilled technician or by the physician two or three times a day. The temperature in the tent is maintained between 56 and 66° F. in the pneumonia of adults. Old people and infants require 70 to 74° F.

The open box-tent of Burgess has a box for the head, the top of which is open, and oxygen is administered in the direction of the pillow. The concentration of oxygen rapidly rises in the area where the head is placed and the carbon dioxide rises to the top of the tank by diffusion. There is also the thermo-circulation tent in which ice is placed inside the tent and sets up a circulation of air which has been cooled and dried by contact with the ice.

The Use of Oxygen Treatment in Heart Disease

Whatever the cause, the symptoms of heart failure are characteristic. The organ is almost always enlarged and, with right-chamber failure there is a backing-up of blood in the liver, the spleen and the kidneys, and in the extremities. When the left chamber fails backing-up of blood in the lungs causes cough and shortness of breath.

An oxygen-want exists in the arteries. The most manifest sign of failure of the right side of the heart is dropsical swelling of the legs, and perhaps of the abdomen. In heart failure the blood flows more slowly through the tissues and oxygen-lack soon manifests itself.

Shortness of breath in heart failure is due in part to the presence of so much blood in the lungs that the optimum amount of air can not enter. Reflexly and by lack of oxygen in the arterial blood, breathing is stimulated beyond normal. Even slight lowering of arterial oxygen demands prompt restoration to normal level. The volume of gas-exchange is diminished by breathing an oxygen-enriched atmosphere; the patient freed from the necessity of breathing rapidly and heavily, is relieved of much of his distress, and the chance of his heart muscle recovering its capacity to function is much enhanced.

Results of Oxygen Therapy in Heart Disease

Patients whose heart disease is due to rheumatic fever are less dramatically benefited by inhalation of oxygen than are those whose failure is due to arteriosclerosis or coronary disease. Oxygen therapy is life-saving in many cases of rheumatic fever with heart disease. Poulton has recorded that continuous inhalation of oxygen tends to reduce the likelihood of development of valvular heart disease in cases of acute rheumatic fever. Heart failure consequent on long-standing high blood pressure is apt to be much improved by continuous inhalation of 50-per cent oxygen for a period of three to four weeks.

In giving oxygen to patients with congestive

heart failure, within one or two days the difficulty in breathing and the apprehension are partially relieved and usually the oxygen content of the arterial blood is raised to the normal; in the next three days the breathing becomes easier and the kidneys frequently begin to excrete freely. During the next week or two the output of fluid may be such as to remove all excess. Once dyspnea, cough and swelling of the legs have been dispelled, the concentration of oxygen is gradually lowered in a period of two or three days, then the patient is removed from the tent or from the mask.

There is no satisfactory explanation of the diuresis resulting from oxygen therapy. That the heart's function is gradually improved by restoration of its oxygen supply to normal is plausible. The blood is then pumped out of the lungs and through the extremities at a progressively faster rate so that there is less back pressure. With a decrease in pressure in the capillaries and veins of the legs there is less leakage of the fluid elements of the blood into the tissue spaces. As a result of the better heart action the total of blood pumped in a unit of time is increased, and so our patient's lungs, kidneys, brain—all his organs—function better.

Oxygen treatment does not exclude other remedies. The exhibition of digitalis and the mercurial diuretics, and a more or less complete restriction of sodium chloride or sodium bicarbonate—or sodium in any form—may be necessary before the individual can eliminate the retained edematous fluid.

Coronary Sclerosis and Coronary Thrombosis

Angina pectoris—a choking in the breast—characterized by recurring attacks of pain under the sternum, at times passing down the left arm or up into the jaw, is due to a thickening or hardening of a coronary artery. Most cases occur in men past forty. The flow of blood to the muscular pump upon which a normal blood flow depends is restricted. To meet the needs of increased body activity there is little heart capacity reserve. At times coronary spasm further limits the flow of blood.

When there is an increased demand for blood and the circulation through the coronary artery is lessened by spasm or hardening, the area of the heart muscle so deprived of blood sets up an extremely painful response, due to lack of oxygen, or to stagnation of products formed as a result of oxygen deficiency. When the condition is due to spasm a 1/100-gr. nitroglycerine tablet will open up the coronary artery for a fuller supply of blood to the heart muscle and the pain will disappear. It has also been observed that inhaling 50- to 100-per cent oxygen will abolish all the pain. Many patients with angina pectoris now keep at hand an oxygen tank and a mask and inhale oxygen instead of taking a pill when pain in the heart occurs.

A number of investigators have proved that deficiency of oxygen in heart muscle causes the pain over the heart or down the left arm, by having patients with this disease breathe 10-per cent oxygen—half that present in the atmosphere—for a period of 20 minutes. Under these circumstances there will frequently develop an attack of acute pain, and the electrocardiogram will show as characteristic signs of oxygen-want a depression of the T wave or the ST segment of the electrocardiogram. When pure oxygen is then administered to these patients the pain promptly disappears. This circumstance is used for diagnosing border-line cases of coronary artery disease.

The most serious complication of this condition is coronary thrombosis. This condition frequently develops when the patient is asleep or at rest and its severity varies with the diameter of the obstructed blood vessel. The pain is moderate, or so agonizing as to require large amount of morphine or, as may be more effective, the inhalation of pure oxygen. If the closure of the blood vessel is complete, a large area of cardiac muscle is deprived of blood and, therefore, of oxygen, and the heart may abruptly fail with death ensuing. In some cases there are congestions of blood in the lungs and a severe oxygen want. Heart muscle is twice as sensitive to oxygen-want as is muscle in the extremities.

The indication for treatment of this condition is primarily the use of high concentrations of oxygen. The patient is put at rest and all activity is suspended as far as is possible. No drug is specifically indicated. With a background of heart disease, and congestive heart failure present, digitalis may be useful. Inhalation of 50-per cent, or pure oxygen has produced a dramatic response in the relief of pain. The cyanosis diminishes or disappears, the heart sounds become louder, the pulse slows and strengthens. Interruption of oxygen therapy before an adequate readjustment of the circulation has taken place may result in recurrence of the symptoms of heart failure.

From complete occlusion of a coronary artery or a large branch recovery may be impossible despite the use of oxygen. However, occlusion of a sizable branch may take place without immediate death, an increase of oxygen being provided

through branches of the coronary artery that surround the obstructed area.

By giving pure oxygen the amount of dissolved oxygen may be increased to 2 c.c. per 100 c.c. of blood—providing a marked rise in the oxygen available to the heart muscle in the obstructed area. Shock sometimes follows coronary occlusion. In shock, medical or surgical, the flow of blood through the capillaries is very slow, tending to acute oxygen-want in the tissues. In many instances the best treatment is an injection of blood or glucose solution into the vein in order to make up for lessened blood volume; however, additional fluid may further handicap the ability of the heart to pump. In severe cases of coronary thrombosis it is safer to continue oxygen treatment for five days after the onset of the attack.

Bronchial Asthma

In this disease muscle surrounding the bronchial tubes suddenly goes into spasm, narrowing the lumen of the tubes and obstructing the flow of air in and out of the lungs. Also, swelling of the bronchial mucous membrane and in some cases an abundant formation of mucus further blocks the passage of air. The disease comes on in attacks with a characteristic wheezing type of respiration. When the condition is continuous and severe it is called status asthmaticus. The constrictor nerves to the bronchial muscles appear to come largely through the vagus, the dilator fibers through the sympathetic nerves.

The immediate remedy for an attack of asthma is an injection of adrenalin, which probably stimulates the broncho-dilator fibers, stops the spasm of the circular muscles and diminishes the swelling of the bronchial mucous membrane.

Asthma is said to depend upon the existence of a state of hypersensitiveness to some substance with which the patient comes into contact. When a patient has become sensitized to a foreign substance, he may reveal this sensitivity: by swelling of the nose and eyes, as in hayfever; by swelling of the skin, as in urticaria; by spasm and swelling of other portions of the body, such as the colon; but the most characteristic manifestation, and perhaps the most serious, is that of spasm of the bronchial muscles.

Except for the fact that a familial tendency exists little is known of the cause of the development of an allergic state. Why a man may live to the age of forty and suddenly become allergic to ragweed pollen or to dust, and then develop asthma whenever he is exposed to these substances, is completely unknown. In many instances making a series of scratches on the skin and placing various substances on them will cause within a period of 20 minutes a localized reddening and swelling of the skin. When this takes place and the offending substances may be avoided, the result is of great benefit to the patient. Thus, if the patient is found sensitive to cat hair, the removal of the cat results in the disappearance of asthma. The same is true of feathers, horse hair, dog hair, certain types of food, and a host of other substances. In many instances the skin tests are negative and a careful detective search for the possible offending agent is made by questioning the patient concerning the circumstances of his attacks. In some instances no clue whatsoever can be obtained as to the cause of asthma.

A number of patients with asthma are allergic to microörganisms, or to the virus that causes the common cold. Frequently a patient may be doing well and free from asthma when he develops a head cold or a bronchitis, after which severe attacks of bronchial asthma take place. Injections of adrenalin are usually able to control the attacks. Ephedrine by mouth is helpful in mild attacks. Inhaling the vapor of 1:100 solutions of epinephrine will often relieve mild attacks of asthma. An older remedy is inhaling the smoke of burning stramonium leaves. Many persons with bronchial asthma obtain only temporary or insufficient relief from these palliative measures; there develops a progressive shortness of breath which shows no response to injection of adrenalin and which may finally lead to unconsciousness, even to death. Others suffer from more or less continuous difficulty in breathing and are reduced to a state of invalidism.

The Pathological Physiology of Obstructive Breathing

A healthy individual breathing through a narrow orifice, recognizes difficulty from the mechanical effort to get necessary air in and out of the lung. Breathing oxygen at this point does not relieve the sensation of shortness of breath since the difficulty is not due to a lack of oxygen in the arterial blood. When the larynx or the windpipe of an animal used for research is narrowed to one-fourth of its ordinary diameter, there is an immediate increase in the negative pressure within the chest, which, persisting over a long period of time, exercises a cupping action on the blood vessels in the lung thereby causing an edema in the air cells with swelling of the mucous membrane of the smaller air tubes. Both these factors interfere with ingress and absorption of oxygen.

No oxygen deficiency in the arterial blood has been demonstrated at the start of an attack of asthma. However, in moderately severe and severe asthma a pronounced degree of oxygen-want takes place, and then the administration of oxygen-en-

riched atmosphere helps to maintain a more normal saturation of the hemoglobin with oxygen and so better supplies the tissues with oxygen. For patients with continuous grave asthma, or with repeated attacks of severe asthma with wheezing between the attacks, the inhalation of oxygen mixed with helium is apt to be of great benefit. Helium was introduced by the author in 1934 as a new therapeutic gas and was immediately tried on patients with severe asthma and on patients who had localized obstruction in the tracheo-bronchial tree. Helium was not proposed as a cure for asthma but as a method of relieving a serious stage in the disease. It was soon observed that many patients who had had intermittent inhalations of helium-oxygen mixtures developed periods of freedom from bronchial spasm of six months to a year, in a few instances of as long a period as two years.

The Rational Basis for Giving Inhalations of Helium with Oxygen

Helium is one-seventh as heavy as nitrogen. Although hydrogen is even lighter, a mixture of hydrogen and oxygen is explosive. Before helium was used, the author confirmed its biological inertness by putting mice in an atmosphere of 79 parts helium and 21 parts oxygen for two months at a time. When helium is substituted for nitrogen the mixture weighs one-third as much as air. The pressure required to move this mixture through a constricted orifice is less than half that necessary for the passage of a similar volume of either air or oxygen under the same circumstances.

Now if a normal individual breathes through a ⅛ in. orifice difficulty in breathing begins immediately. If the subject inhales oxygen and helium, 10 to 90, the difficulty of breathing is relieved despite the fact that oxygen-want has been produced. However, if 10-per cent oxygen is inhaled for more than a short period the breathing is stimulated by oxygen-want, and shortness of breath again takes place. Experiments have shown that the helium-oxygen mixture can be inhaled at a smaller pressure difference within the chest than can either oxygen or air, and that if the mixture is breathed under a positive pressure of 5 cm. of water inspiration is considerably aided.

The first patient treated with helium and oxygen, 80:20, was a man of 22 who had had bronchial asthma for three years, and who had been in the hospital for a period of five weeks. He was not in the status asthmaticus, but he suffered from almost continuous asthma. He slept poorly, even with morphine, and was unrelieved by oxygen, adrenalin and the usual measures then employed. An apparatus using a mouthpiece was used, this placed between his lips and connection made with a spirometer containing the helium-oxygen mixture. After the patient had breathed this gas for 1½ minutes his head fell forward and he looked as if he had collapsed. Shaken and asked what had happened, he replied that this was the first natural sleep he had had in five weeks. With six hours a day of these inhalations in a week he was free from severe asthma although spasmodic seizures continued to recur. He was able to leave the hospital and return to work, and adrenalin, self-administered, now controlled his asthma.

There being no significant difference between the viscosities of helium, oxygen and nitrogen, when obstruction exists to the entrance of inspired gases to a considerable area the benefits of helium become correspondingly less.

The Principle of Treatment of Bronchial Asthma by Helium-Oxygen Inhalation

The inhalation of oxygen mixed with helium has also been used as a method of stopping recurring attacks of severe asthma. Relaxation of the bronchi appears to follow decreased physical effort in breathing. After treatment for five days 90 out of 100 patients with severe bronchial asthma had a free interval of no symptoms, or of slight wheezing relieved by inhalation of epinephrin, or by ephedrine by mouth. In the majority of instances an improved clinical state continued for seven to eight months; in some there was no repetition of severe asthma.

The treatment consists of inhalations of helium 80, and oxygen 20, parts for an hour, two to five times a day, in the more severe hospital cases. Ordinary office treatments were an inhalation of the mixture once a day. Other measures employed include the administration of aminophyllin—intravenously, by mouth, or by rectum. The author uses rectal instillation of 7-10 gr. of aminophyllin before the helium-oxygen treatment, and, in addition, potassium iodide. In the more severe cases epinephrin is administered by running a stream of oxygen through Vaponefrin in the nebulizer. The epinephrin spray is also given prior to the treatment, and in severe cases at 3- to 4-hour intervals during the day. Use is made also of 1-per cent neosynephrin in the same manner, to reduce the congestion in the respiratory passages.

Aminophyllin may be given rectally if helium-oxygen therapy is not available for overcoming intractable asthma; i. e., 6 to 8 gr. in 20 c.c. water A. M. and P. M. for six to 12 days.

It appears that repeated relaxation of the bronchial constrictor muscles reduces their tendency to spasm. This course of treatment is usually completed within five days and gives a variable period of freedom from severe asthma.

The Treatment of Pulmonary Emphysema

In middle and later age the epithelium in the lungs at times gradually loses its elasticity. Acute infections of the bronchi are apt to hasten this process. In severe asthma with persistent constriction of the small bronchi there is an increasing distention of the air cells, which is relieved when the spasm disappears. However, patients with pulmonary emphysema are seen who give a history of long-standing asthma, and it is probable that atrophic changes in the lining membrane of the alveoli of the lungs occur as a result of pressure. The lining membrane is frequently stretched to the point of rupture. Air may collect in these large pockets from which little oxygen is absorbed. The chest distends until its contour has become changed to the classical "barrel-shape."

When the elastic quality of the lung tissue has been largely lost, inspiration expands the periphery of the lung mainly and this becomes over-distended, and many of the small capillaries of this area disappear. Loss of the elastic recoil of the lung prevents full expiration. The diaphragm's domes may be completely flattened out by the over-distended lung, and on the accessory muscles may devolve the full burden of respiration.

Inhalation Treatment of Pulmonary Emphysema

The disease is progressive and no treatment is known which will reverse the course. However, inhalation of oxygen-enriched air relieves the dyspnea and in very severe cases is necessary as a long-continued form of treatment. In the majority of cases inhalation of pure oxygen decreases the burden of breathing 25 to 30 per cent. In the moderately severe case inhalation of pure oxygen for half an hour, night and morning, is of great help. Helium-oxygen mixtures would be helpful, but, inasmuch as the obstructive element is apt to persist the cost of a continuing program of helium-oxygen inhalations restricts its use. The cost of oxygen is small.

The vaporized spray of 1:100 neosynephrin and 1:100 epinephrin is also used as a temporary and palliative remedy in these cases to lessen the bronchial spasm. In cases of severe dyspnea, as in an acute respiratory infection, inhalations of the spray at 2- to 3-hour intervals are of value along with continuous residence in an atmosphere of 50-per cent oxygen.

For patients who can afford it, an oxygen chamber in the home is an extremely comfortable way of being treated. The length of residence in the chamber should be about four hours in the day and 12 hours at night.

Edema of the Lungs

Pulmonary edema occurs as a complication of heart failure and of pneumonia, also after long-continued asthma, and after conditions which cause obstruction in the upper respiratory passages, including exposure to irritating gases.

Inhalation of oxygen under a pressure of from three to six cm. of water has recently been the remedy mainly used, along with cardiac and respiratory stimulants. There have been cases of pneumonia in which the clearing of edema in the lungs has taken place within 15 minutes after positive pressure has been obtained. The one precaution in using positive pressure during the breathing of oxygen, or helium-oxygen mixtures, is that the pressure not be elevated to such a point as to retard the flow of blood from outside the chest into the right side of the heart.

For treatment with positive pressure a mask may be employed and it is now not difficult to hold the mask to the face continuously. A transparent hood has been developed which makes contact at the neck. A large ice chest placed right alongside of the bed contains a blower which passes cooled and dried oxygen into the hood and allows the contained atmosphere to bubble off from a water-bottle set at a definite pressure by the insertion into it of a glass tube, at 2, 4 or 6 cm. of water.

Carbon Dioxide as a Therapeutic Gas

In 1858, Miescher demonstrated that inhaling small percentages of carbon dioxide stimulated the breathing. At the start of this century Haldane showed that the pressure of carbon dioxide in the lung cells regulated the volume of breathing in an accurate way. That oxygen-deficit stimulates breathing was harmonized with the fact that carbon dioxide increases pulmonary ventilation by the theory that lack of oxygen increases the sensitivity of the respiratory center of the brain to carbon dioxide.

Yandell Henderson and Haggard came to believe that during the induction phase of anesthesia the blood is apt to be deficient in carbon dioxide, this deficiency to be followed by proportional decrease in the alkaline bicarbonates in the blood. These investigators suggested that 5- to 10-per cent carbon dioxide be administered to make up the loss. Animals anesthetized over long periods were found to benefit from this therapy.

Carbon dioxide-oxygen inhalations have improved the recovery rate in cases of carbon-monoxide poisoning, of drowning and of electric shock. They have been employed to advantage in tracheo-bronchitis to loosen mucous secretion, also in massive

Asphyxia of the Newborn

A recent study shows that the combined still-collapse of the lungs, hiccough and atelectasis of the lungs of the new-born.
birth and neonatal deaths due to respiratory complication amount to seven in 100 births. When the first breath opens up the collapsed alveoli there follows the opening up of the capillaries of the pulmonary artery. If a large area of the lung fails to expand, death may soon take place as a result of great oxygen-want. If smaller areas of the lung do not expand, the infant may suffer from oxygen deficiency and perhaps later infection causes bronchopneumonia. The treatment of the condition from Biblical times up to the present includes inflation of the lungs of the newborn baby by mouth-to-mouth breathing. Provided this is done gently, this old procedure is a valuable remedy. Swinging and spanking the baby, so frequently done, most often do more harm than good.

It is of first importance to find and remove any obstruction to the air passages. Instrumental aspiration saves many lives. Carbon dioxide by inhalation has been frequently used for periods of two to three minutes, and the child then placed in an oxygen tent. Others prefer to use high concentrations of oxygen, with aspiration when necessary. Continuous residence in an atmosphere of 50-per cent oxygen will maintain in many cases a sufficient amount of oxygen in the arterial blood, and the lungs of the infant may gradually expand under these circumstances. A recent advance is the administration of helium-oxygen mixture, on the theory that the smaller helium molecules will enter the lung cells through alveolar ducts which will not admit the larger oxygen or nitrogen molecules.

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THE PAINFUL ARM AND SHOULDER

A troublesome condition which is very frequently encountered is hopefully dealt with in an exchange.[1]

The pain, paresthesias and the various degrees of sensory impairment affect primarily the ulnar distribution. The small muscles of the hand, the flexors of the fourth and fifth digits, the flexors of the remaining digits and the flexors of the arm usually are involved in about this order before the extensors become affected.

Pain is always felt in the arm, in the shoulder, the supraclavicular region, rare below the elbow, not regularly intensified by moving the shoulder joint or by turning the neck. Many patients can get relief by elevating the shoulder. Pain varies from mild discomfort to complete incapacity.

Numbness or hyperethesia below the elbow follows the sensory distribution of the ulnar nerve, may be demonstrated with test-tubes of hot and cold water. Stroking the skin in the ulnar distribution may produce tingling or electric shocks.

There is muscular weakness of some degree. The pulse in the severe case may be barely perceptible at the wrist. The involved hand and arm may be colder to touch than those of the opposite side, may be moist; color variations.

Without unilateral scalenus tenderness on the involved side the diagnosis is unwarranted, pressure is made over the anterior scalenus muscle just above the clavicle, detected by pressure made on the two sides simultaneously. This maneuver should reproduce exactly the pattern of the pain, numbness and paresthesias.

The postural test is performed by the patient turning the head toward the *uninvolved* side, pointing the chin to the tip of the shoulder, taking a deep breath, holding it and observing the volume of the radial pulse with the arm abducted. When the scalenus is tight, reduction or obliteration of the pulse at the wrist often is demonstrated. Also, reproduction of the pattern of the pain and numbness.

The most useful conservative measure consists of keeping the arm up above the shoulder level with the hand behind the head. Attention was called to this posture by a patient who presented himself for examination with his hand behind his head. The patient should be encouraged to keep his painful arm abducted with the hand behind the head as much as possible during his waking hours and, if feasible, to sleep with the arm thus elevated. The relief of pain reduction in scalenus spasm, thus helping to break a vicious cycle.

Heat applied locally is advised. The infra-red lamp is a satisfactory method.

Scalenous neurocirculatory compression is one of the more common causes of the painful arm and shoulder. It may occur as a primary lesion with no etiologic factor in evidence other than trauma. More frequently, the characteristic symptoms occur as sequelae of disease about the shoulder girdle and cervical spine.

The clinical signs and symptoms are characteristic and reliable and diagnostic error need not occur if the examination is performed accurately.

Only those patients who have failed to respond to adequate conservative treatment should be subjected to operative measures. Treatment of secondary scalenus compression is that of the primary lesion.

If patients are properly selected for operation all patients will be improved and many of them dramatically cured.

1. R. G. Spurling & E. G. Grantham, Louisville, in *Jl. Mo. State Med. Assn.*, Oct.

The Recognition Of The Potential Suicide

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THE PURPOSE of this paper is essentially practical. That being so, it is hoped that its purpose will excuse its somewhat dogmatic presentation. It is hoped that it may fill a need for those physicians who are not particularly concerned with psychiatry, but who nevertheless, because of their position of trust and confidence in the community, are often the first to come in contact with the potential suicide.

The ability to select with unvarying success the potential suicide, and to judge, once a patient has shown suicidal tendencies, whether he is still dangerous to himself is a talent not always possessed by even the trained psychiatrist. The aims of this paper, therefore, are modest. It is hoped that it may make evident the necessity of being acutely aware of the problem. In addition, certain relevant clinical information will be reviewed that may help in the handling of the problem when it is encountered in general practice.

The theoretical aspects of suicide will not at this time be presented or discussed. It is not out of place, however, to mention Morcelli's[1] oft-quoted observation concerning the broader etiological aspect of the condition; for, after making note of the rarity of suicide among primitive peoples and its increase in the modern world, he states that it is not possible to explain suicide otherwise than as "an effect of that universal complex influence to which one gives the name of civilization." As our civilization has become more complex, the suicide problem has likewise increased, and vital statistics show that it is a problem which is daily growing more important. The statistics for 1931 of the U. S. Department of Commerce show that suicide was the twelfth most important cause of death in that year. There were over 20,000 people in the registration area of the United States who had made successful attempts. This death rate was approximately equivalent to the combined death rates, in the same year, from scarlet fever, typhoid fever, diphtheria, whooping cough, epidemic encephalitis and poliomyelitis.

It is impossible to estimate accurately the number of unsuccessful suicidal attempts that this number of successful suicides implies. Moore,[2] in his series, had a mortality of 11 per cent, which is appro imately one successful attempt to nine unsuccessful ones. On this basis it might be estimated that there were somewhat less than 200,000 suicidal attempts made in the registration area of the United States for the year 1931. More recent statistics corroborate this. An insurance company[3] estimated that in 1940 more than 18,000 persons committed suicide and probably an additional 100,000 made unsuccessful attempts. The report further stated that more women than men made the attempt but that men were three times more successful; more than half the women were under 30 years of age but only a quarter of the men; the younger the person the less apt is the attempt to be successful. Only one out of six attempts of persons under 25 years of age was successful, while two out of three at age of 50 succeeded; three fourths of the women used poison—the least efficient method—while men selected more violent ways such as drowwing, shooting, hanging, or jumping from high places. The motives were in many instances unknown, but the more common known reasons were ill health, domestic troubles, financial difficulties, and despondency over life in general.

Both of these sets of figures are startling and may possibly be understatements.

The general practitioner[4] has a grave responsibility, it would seem, to combat this serious social problem. His position in the community often gives him the first opportunity to come into contact with the potential suicide. He should, therefore, be equipped to deal adequately with the individual case by being acutely aware of the situation, and by having at his disposal the knowledge necessary to prevent such a conclusion in his patients. When he is confronted by a patient with suicidal ideas or tendencies, his inquiry and observation should be directed toward determining the status of the patient with regard to certain points

in the history and examination. These general points include: a thorough history of any past suicidal attempts; an investigation into the patient's thoughts about suicide, both present and past; and an examination of the patient and the people with whom he has been in contact, as to whether he has ever threatened suicide or expressed the wish to die. Further, is there present an abnormal inner impulse in the form of a hallucinatory or delusional experience which is compelling the individual toward suicide, strong enough in its content to override the normally strong impulse to self-preservation? Inquiry into the family history is relevant, for, though the reasons for it are not clearly understood, there seems to be a familial tendency to commit suicide. Occasionally it has been observed that in certain cases the history of a suicide in the family seems to create an obsession in the individual, and this in turn results in a compulsive suicidal attempt. It is usually thought that the religious background and training are factors to be considered as forces in the psychic life of the patient. If, therefore, strong religious convictions against self-destruction are present, the chance of the patient making an attempt, other things being equal, is probably less.

Information obtained from questions of this sort has to be sifted and weighed until a judgment is formed regarding the particular case in question. A conservative attitude in forming such a judgment should be the key to the final action in the case. At the risk of being repetitious, it is necessary to emphasize the ominous importance of a previous suicidal attempt. It is obvious in such cases that the underlying psychological mechanisms are already present and it is only necessary to determine whether the psychological and situational stage is set for another attempt. So much for general considerations.

In arbitrary fashion and for the purpose of clearness and convenience, potential suicides may be divided into the following three classes: (1) nonpsychotic individuals; (2) the manifestly psychotic; and (3) those who are psychotic, but not obviously so.

In the non-psychotic group are found psychoneurotics and those apparently normal individuals who are reacting in a more or less logical way to various life situations. These situations may be either apparently trivial, as in the case of an emotionally labile seventeen-year-old girl who swallowed iodine when she discovered that her sister had surreptitiously borrowed her silk stockings, or the situation may be more catastrophic in nature. As obvious examples of the latter we may consider such personal disasters as illegitimate pregnancy, financial ruin, disappointment in love, loss of job or reputation, etc. Strangely enough physical illness, even though it be grave and burdensome, is only infrequently the precipitating factor. Certain unpublished material indicates that of 1,000 attempted suicides admitted to the Boston City Hospital between 1915 and 1935 only 33 did so because of physical illness.

The facts already mentioned, considered as precipitating factors in presumably normal individuals, might logically lead us to the conclusion that everyone is potentially suicidal, and that therefore an actual overt attempt depends upon the loss of balance between what might be called our suicidal threshold and the situation with which we are faced at the moment. In considering patients, therefore, who are thought to lie within the wide limits of the normal, weigh carefully the situation and the patient's ability to cope with it.

It is generally conceded[3] that it is rare for true psychoneurotics to make a determined suicidal attempt, and even more rare for one in this group to complete the act; but it is not uncommon for a psychoneurotic to threaten suicide, even to make a feeble gesture for the dramatic end-seeking effect produced. If any patient at a given moment could be definitely and infallibly diagnosed as a psychoneurotic, the problem would be a comparatively simple one. However, there is often a difficult diagnostic problem involved in such a case, for a number of the psychoses in the initial stages simulate the clinical picture of a psychoneurosis. It is especially important to remember that psychoneurotic symptoms frequently predominate in early schizophrenia, involutional melancholia, general paresis, and cerebral arteriosclerosis. The matter is further complicated and made more serious because it is during this initial phase of these psychoses, when the diagnosis is particularly difficult, that the suicidal tendencies are apt to be most persistent and most efficiently carried out. For practical purposes, and to insure the safe treatment in a case of attempted suicide, it is well to guard against minimizing the supposedly dramatic suicidal gesture. The swallowing of such relatively innocuous substances as ether, iodine, or mercurochrome may be a manifestation of a deeply felt death wish. Often the article used is merely an indication of pharmacological ignorance, and not actually a sign pointing to insincerity in the act.

In the psychotic group all patients with depressions, and particularly the depressed phase of a manic-depressive psychosis and involutional melancholia, are singularly prone to suicide; in fact suicide is to be considered as a possible end-result of any psychosis.

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Acute Mediastinal Abscess

Report of a Case

T. Formy Duval, M.D.—W. E. Miller, M.D.
Whiteville, North Carolina

ACUTE ABSCESS of the mediastinum in children is rare. Its rarity and other considerations cause us to regard the case to be reported as worth reporting from the viewpoints of etiology and therapy.

Etiology: Review of the literature reveals as some of the causes of acute abscess of the mediastinum: (1) perforation of the esophagus or trachea by a foreign body, (2) perforation of the esophagus, trachea, or larynx from surgical procedures, (3) extension of an infection from the neck, (4) suppurations about the tonsils or pharynx, (5) acute infection of the mediastinal lymph-nodes, (6) spinal or sternal caries, (7) empyema, (8) lung abscess, (9) pneumonia), (10) trauma of the chest wall.

Diagnosis: The following outline by Dr. Chester S. Keefer summarizes briefly the points to be followed in arriving at a diagnosis of acute mediastinal abscess: "(1) A history of the presence of a condition which is capable of causing a mediastinal infection, (2) the constitutional signs and symptoms of an infection, (3) the localizing symptoms and physical signs in the mediastinum due to involvement of various anatomical structures, (4) signs resulting from an extension of the process to neighboring organs, (5) characteristic röntgen-ray findings in the chest, (6) finding an abscess on exploration."

Treatment: When a diagnosis of acute mediastinal abscess has been made, adequate surgical drainage should be established. The method of approach will be determined by the location of the abscess, as can be demonstrated by röntgen-ray examination. The necessity of adequate supporttive treatment can hardly be overstressed, because these patients are acutely and gravely ill. Blood transfusions and intravenous injections of fluids are helpful. In those cases of known perforation of the esophagus or trachea some authors advise establishment of drainage through the neck before an abscess forms; but now that we have the sulfonamides which have proved so helpful in combatting potentially acute infections, this hazardous operation might be avoided by closely observing the patient and giving one of these drugs.

A few cases have been reported of spontaneous drainage of the abscess into the trachea or esophagus. One might hope for this to occur but should never consider it in the treatment, as such a rupture would most likely occur only in the advanced stages. Aspiration has been employed, but more adequate drainage is desirable in most cases.

Case Report

A white boy, aged 8 years, was admitted to the Columbus County Hospital on May 9th, 1941, complaining of low substernal pain and orthopnea. The mother stated that 5 days before a heavy ladder had fallen on the patient's chest. At the time he did not appear to be seriously injured, but the following night he was fretful and began having nausea and vomiting.. He was first seen by his family physician who referred him for further treatment.

The child's general appearance was that of an acutely ill patient—temperature 99°, pulse 120, respiration 22. The leukocyte count was 10,250 with 90 per cent polymorphonuclears; hemoglobin 61 per cent. The urinalysis showed positive tests for acid and acetone. The most conspicuous physical sign was a loud friction rub heard over the precordium and a harsh systolic murmur heard best at the apex. The lungs were clear to percussion and auscultation. There was tenderness to pressure over the lower sternum.

A röntgenogram of the chest taken on admission (Fig. 1) revealed nothing conclusive. The diagnosis made on admission was rheumatic heart disease with pericarditis, contusions to the anterior chest wall, and acidosis. The patient was treated symptomatically—a blood transfusion, glucose solution intravenously as needed, and sulfanilamide. For the first seven days the temperature ran a septic course ranging from 99 to 102°.

On May 16th the temperature rose to 103°; the leukocyte-count to 16,300 with 86 per cent polymorphonuclears. Röntgen examination (Fig. 2) showed a mass pointing into the right chest continuous with the heart shadow. By this time the patient had become very toxic, the area of cardiac dullness had increased markedly, the heart sounds were more distant and the friction rub had disappeared.

On May 19th the leukocyte count had increased to 29,600 with 68 per cent polymorphoneuclears and the temperature to 104°. Thoracentesis was done and pus found just to the right of the sternum in the 4th intercostal space. The diagnosis was modified to acute abscess of the mediastinum and operation for its drainage carried out. The patient was given avertin anesthesia and 0.5 per cent metacaine infiltrated locally.

A transternal approach was made in the midline at the level of the 5th sternochondral junction. The trephine opening in the sternum was enlarged with rongeurs to provide better exposure of the mediastinum and adequate drainage. The abscess cavity contained 350 c.c. of yellowish pus which escaped under considerable pressure. The pericardium could be easily seen and palpated. There appeared to be no increase in the pericardial fluid.

Following operation the patient was given a transfusion of blood and the administration of sulfathiazole continued. Improvement was rapid, temperature returning to normal in three days. Sulfathiazole was discontinued on May 24th, the 5th post-operative day. On May 27th temperature registered 105°. The use of the drug was resumed and the temperature returned to normal. A small blood transfusion was given on May 29th.

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DEPARTMENTS

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

THE PROMPT-FEEDING PROGRAM FOR BLEEDING GASTRIC AND DUODENAL ULCER

To every doctor who has patients with peptic ulcer—and who does not have them?—the great improvement in results following feeding rather than giving alkalis is great news. Whereas, formerly, even doctors who were convinced that most such patients could be just as well cared for in the homes, there was fear bleeding would occur *demanding* immediate operation so we were uneasy about keeping them at home. Now, since free feeding has proved far more life-saving than operation, we can, with clear conscience, advise that they stay at home and eat their own food. See what our own North Carolina native, Dr. T. G. Miller[1] has to say on the subject.

Our patients were started on a diet consisting chiefly of milk and cream, cereals, eggs, pureed vegetables, cooked fruit and breadstuffs. Sometimes, to begin with, only the gelatin mixture of Andresen was administered. In all instances six or more feedings a day were given. Within 24 hours we usually added meat. Water was taken by mouth as desired. In so far as possible morphine was denied, though 12 patients received one or more injections, usually given by the interne before we observed the case. Otherwise only phenobarbital by mouth or sodium phenobarbital under the skin was used, when needed, as a sedative. Alkalies also were dispensed with, though sometimes magnesium trisilicate or aluminum hydroxide was given for the control of epigastric distress, usually for only one or two days. No hematinics were administered during the bleeding. Thirteen of the patients received one or more transfusions.

Only one patient, a man 49 years of age, died. Seven years previously he had had a cholecystectomy for stones and excision of an anterior duodenal-wall ulcer with pyloroplasty. Three years later röntgen study showed a large lesser-curvature gastric ulcer, for which operation was done. The common duct was drained. After a few days there was profuse bleeding through the drainage tract and vomiting of blood; repeated transfusions of blood and morphine by the surgical service before being seen by authors. The patient was then put on a feeding program, but died within 24 hours. A perforated duodenal ulcer with rupture into the drainage tract was found, and a large open artery in the wall of the ulcer.

Miller and Elsom in 1938 collected the data on 5843 cases of bleeding ulcer treated medically, even including 545 on a prompt feeding program, and found a gross mortality of 8.7%. The therapy in most of the cases, except in those on the Meulengracht regimen, consisted in starvation throughout the period of active bleeding, the free use of morphine for restlessness and a minimal amount of fluid subcutaneously or by vein. The use of transfusions varied with the authors, many reserving them for the more severe cases and then administering small amounts at a time. Following the hemorrhage, a simple diet, usually of the Sippy or Andresen type, was employed, at least for the first week. The mortality for Miller and Elsom's 49 cases, so managed, was 6.1%. For 383 cases collected from the literature and treated surgically the mortality rate was was 28%, the lowest being in Finsterer's series, 5.9%.

An analysis of 1396 reported cases of gross bleeding from ulcer of the stomach or duodenum, including 32 personally observed, all treated by *prompt feeding and a reasonable amount of fluid*, shows a gross mortality rate of 3.1% and a net mortality rate of 1.9%. These results are far better than for any other type of treatment, medical or surgical. The type of diet is regarded as of secondary importance; of most importance it is that food be given promptly, frequently and in adequate amount, irrespective of the degree of bleeding.

Morphine should be strictly prohibited, because of its depressing effect on the tonicity of the musculature of the duodenum, and probably also of the stomach.

The prompt feeding program is effective probably because it meets nutritional demands, supplies fluids to counteract shock and neutralizes the gastric acidity thus preventing further erosion in the ulcer area, and increases intragastric and intraduodenal pressure thus tending to close the open and bleeding vessel.

1. J. T. L. Nicholson & T. G. Miller, Philadelphia, in *Amer. Jl. Dig. Dis.*, Dec.

MODERN METHODS OF IMMUNIZATION

(T. M. Palmer, Jacksonville, in *Jl. Fla. Med. Asso.*, Jan.)

THREE years of employing combined diphtheria-tetanus toxoid, alum-precipitated (Lilly) has caused no untoward reactions. Two doses at 3-mos. intervals represent the usual immunization. Immunity is established in ten to fourteen days after second dose. Two months following second injection use the Schick test. If negative, immune to diphtheria and tetanus. Recommend an additional dose of tetanus toxoid in case of subsequent exposure to tetanus. Protection not be longer than 90 days or may last for several years.

There is no agreement as to the advisability of immunizing against scarlet fever.

In studies made in Milwaukee hemolytic streptocci were recovered in cultures from the throats of 43% of 3,000 patients with scarlet fever from one to three months *after* quarantine had been lifted. The rate per thousand for inoculated children was 28. For the non-immunized school population it is 80 per thousand.

A negative culture of the throat in one who has had scarlet fever is no proof that he or she may not transmit the disease. The number of atypical cases makes immunization important. In 25% of the cases there is no rash and they pass as cases of tonsillitis.

In a recently reported work three intradermal injections of 800, 1600 and 3200 skin test doses respectively were given at intervals of two and four weeks. In another series, by the original Dick method, 500, 2000, 8000, 25000, and 80000 sgin test doses were given at 7-day intervals. Injections be given on the outer aspect of the upper part of the arm. Dilutions prepared freshly each injection. The 5th dose of Dick toxin was diluted with normal saline so that the requisite number of skin test doses was contained in 0.1 c.c.

Reactions were negligible, and most often after the first injection.

One cannot say anything definite about the duration of immunity.

One could be immunized against typhoid fever as well by the intradermal as by the subcutaneous route. Diler and Dunham revaccinated by the intradermal route and concluded that one dose of 0.1 c.c. of vaccine parallels that following the initial vaccination with three subcutaneous injections of 0.5 c.c., 1 c.c. and 1 c.c. of vaccine at weekly intervals. The reactions were mild. Revaccination should be performed from two to four years following primary vaccination.

Tuft recommends the injection of 0.1 c.c., 0.15 c.c. and 0.2 c.c. of typhoid vaccine at weekly intervals—the first dose on the flexor surface of the forearm, subsequent doses on the outer aspect of the upper arms.

THERAPEUTICS

J. F. Nash, M. D., *Editor,* Saint Pauls, N. C.

TREATMENT OF IMPETIGO CONTAGIOSA

The family doctor is bothered a lot with this troublesome skin disease. It is a question whether the usually trivial course justifies the pother about it—isolation and all that. However, newborn babies have been known to die of it.

Here is outlined a satisfactory management, *i.e.*, in so far as you can get a child to your office often enough and long enough to see the case through.

Impetigo contagiosa, erythematous areas, upon which discrete, thin-walled vesicles and bullae rapidly form, soon become pustular, erupt and discharge a thin straw-colored exudate, which rapidly dries and forms a yellowish to brown superficial crust, which, by the addition of new layers become thick, and coalesce as the infection progresses.

Caused by a mixture of staphylococci and streptococci, the face, ears, neck, forearms and hands are favorite sites. Any part of the body may be attacked. It is often secondary to pediculosis, scabies, and insect bites; any age or sex, children more susceptible.

Wash adjacent skin several times daily with Castile soap and warm water, rinse and dry. Following this, 3 to 5% U. S. P. ammoniated mercury ointment should be lightly massaged into the non-infected parts, before any attempt is made to remove the crusts. The crusts and surrounding areas are cleansed with Castile soap and warm water, rinsed and dried. Pledgets of cotton, soaked with warm mineral oil, or boric acid solution, are then applied to soften the crusts, which are then lifted from the skin by the use of forceps; complete the removal. Following the removal of the crusts, the entire denuded area should be vigorously massaged with the following ointment, giving special attention to the margins.

R-Ung. ammoniated mercury U. S. P. 3-5% 30

Sig: Remove crusts as rapidly as they form, and massage ointment into affected parts.

It is important to have the crusts removed as rapidly as they form and then follow with the ointment application and massage, after cleansing the parts.

Patients should be instructed concerning the contagiousness of the disease.

The patient should make daily visits to the physician's office for the removal of crusts, opening pustules, ointment massage, and general observation.

When the infection involves the hairy areas on the skin, keep the hair shaved as close as possible, treat same as non-hairy areas.

If the exudation from the lesions is profuse use an ointment of

Zinc oxide, powdered, 5%

Ung: ammoniated mercury, U. S. P., 3-5%

Remove crusts as rapidly as they form, and massage ointment into affected parts.

If lesions persist and spread for 4 to 5 days, increase the strength of ammoniated mercury to 8 or 10%. Mercury dermatitis must always be kept in mind. At the first sign of intolerance of the mercury discontinue and use potassium permanganate tablets 0.32 in one to two quarts of warm water as compresses, 15 minutes every 2 hours, after the crusts are removed.

Between applications of the compresses:

Talc, purified	20
Zinc oxide	10
Glycerine	5
Lime water qs ad.	240 c.c.

Sig: Remove crusts, shake, and apply to affected parts.

1. M. T. Ebner, Cleveland, in *Ohio Med. Jl.*, Jan,

After the dermatitis has subsided, the above applications are discontinued and the following substituted.

Acid salicylic	
Resorcin	aa 0.3
Benzoinated lard	
Petrolatum	
Lanolin	aa 10

This is to be freshly prepared.

Remove crusts and apply to affected parts with massage.

When treatment is carefully followed, the average case of impetigo contagiosa is cured in five to 15 days.

THE GENESIS OF PELLAGRA, PERNICIOUS ANEMIA AND SPRUE

(Seale Harris & Seale Harris, Jr., Birmingham, in *Amer. Jl Dig. Dis.*,, Jan.)

Pellagra, pernicious anemia and sprue are separate disease entities.

The mouth and gastrointestinal symptoms in pellagra, without skin lesions, pernicious anemia and sprue may be indistinguishable one from the other in cases in which there is macrocytic anemia.

The most effective treatment in pellagra, pernicious anemia and sprue is liver and liver extracts. Nicotinic acid is an ingredient of liver and liver extracts.

Liver pathology, usually fatty degeneration, is an almost constant finding in pellagra and pernicious anemia and to a less extent in sprue. Atrophy of the stomach and intestines may be found in all three diseases. If cord changes are found in pellagra, pernicious anemia, or sprue, the lateral and posterior columns are involved.

Liver insufficiency appears to be a factor in the genesis of pellagra, pernicious anemia and sprue.

Pellagra and pernicious anemia, sprue and pernicious anemia, pellagra, sprue and pernicious anemia have been found to exist in the same patients.

Pellagra, pernicious anemia and sprue appear to be allied nutritional diseases.

HISTORIC MEDICINE

HENRY TURNER OF NEWPORT

First to Realize and Practice Cerebral Decompression

Wilfred Pickles, M.D., Providence, in *Rhode Island Medical Journal*, December, 1941

In 1642, Captain William Turner left Devonshire, England, to settle in Dorchester, Massachusetts. He was made a freeman of the Colony in the following year. In 1665 "certain persons among whom the prominent ones were Thomas Gouto, Wm. Turner, Edward Drinker, Thos. Osborne, John George, etc., finding their views on certain points of Doctrine and Practice, particularly in relation to infant baptism and baptism by sprinkling, to differ essentially from those recognized as Orthodox, among the Puritanical Churches which ruled the Province, withdrew from the Communion of those Churches, and established at Charlestown, the Church subsequently known as the First Baptist Church of Boston." Turner and his companions fared but little better than Roger Williams. They were fined, imprisoned, whipped and banished, but it is pleasing to learn that the Captain, "not being of very flexible material, declined to sacrifice his convictions." The passage of time, however, must have increased the flexibility of his opponents for he was returned to favor; and in 1676, with a company of a hundred men, he surprised and severely punished a band of Indians at a place now known as Turner's Falls. He was killed by Indians in the same year at Northampton.

Three generations later, the medical succession of the family began with Dr. William Turner who studied medicine in Newport, in the 1720s.

Henry Edward Turner, in the fourth medical generation of his family, was born at Warwick 1816. At the age of 17, he took up the study of medicine in the office of Wm. and J. V. Turner (his uncle and father) and took the degree of M.D. at the University of Pennsylvania in March, 1836.

In 1837 he started in partnership with his father, and soon developed a large general practice, much of it in surgery. He was active in public affairs, was Port Physician and City Physician from 1853 to 1897, Surgeon to the Newport Artillery for 25 years. During the Civil War, he served with the troops at Fort Adams. For many years he was on the staff of the Newport Hospital and a member of the Newport Board of Health, and later of the State Board of Health.

In the *Boston Medical & Surgical Journal* of September 25, 1850, Turner reported a "Case of Fractured Cranium." His brother Richard had been thrown from a horse, sustaining a "wound on the right side of the head of great extent and frightful appearance in the temporal fossa, the skull was fractured and driven in upon the substance of the brain, so that three fingers might be passed directly down into the brain, an inch or more, without resistance . . . . . There was a considerable quantity of brain about the wound, as well as upon the stones where he fell, the quantity lost could not have been less than an ounce." The patient had been exposed for three or four hours to weather "of the peculiarly penetrating and unpleasant description which characterizes our spring." "Considerable paralysis of the left side was very evident upon his attempting to answer questions, which he could do quite pertinently when aroused, although he was aroused with great effort." Dr. T. C. Dunn was called and converted the two wounds into one, removed fragments of

bone totaling the size of a dollar and dressed the wound with lint wet with cold water, changed every 10 or 15 minutes. "On the second morning after the accident, the symptoms became very unfavorable, the convulsive movements set in with renewed force, and the stupor increased; but upon removing the dressings, a quantity of bloody serum and disorganized cerebral matter was removed and instantaneous relief was manifested; and from that time there was a gradual though very slow improvement, the most serious feature being the remarkable diminution in the rapidity of the pulse, which is almost pathognomonic of serious injuries of the brain, and the removal of which was as gradual as the other evidences of restoration." The patient had a rather stormy recovery. Convulsions were treated by bleeding, and he was given nothing but bread and water for three weeks, after which he was allowed one molasses cookie a day. "After the first few days, a hernia cerebralis occurred, which was treated by pressure made by strips of adhesive plaster drawn over little pieces of sheet lead, and which finally disappeared after about four weeks. At the end of the 5th week, he was removed home, without difficulty, and no unfavorable symptoms afterward occurred to interrupt the cure, which, at the end of the 12th week, was in all respects perfect, neither his physical or mental condition being at all impaired."

Eleven years later Dr. Turner presented the following account: "I was called in haste to see a man on board a vessel, lying at Long Wharf. A spar had fallen from aloft, and struck him on the head, producing a depression, such as would be occasioned by a man's thumb pressed into putty, with no apparent fracture radiating from it. I immediately extracted, with forceps, a very large number of fragments of bone leaving an almost circular hole through the parietal bone, somewhat less than an inch in diameter, the dura mater uninjured, comatose for 32 hours, when he died. In this event I felt some disappointment. The dura mater was not penetrated, whereas in my brother's, it was much lacerated, so that the substance of the cerebrum escaped in considerable quantity; and also inasmuch as he received immediate attention and was kept warm, whereas my brother was exposed for three hours to a chilly, east wind." "The question suggests itself whether the penetration of the dura mater and consequent escape of blood, and also the loss of substance, and subsequent protrusion of cerebral matter, in the form of hernia cerebralis, did not, in my brother's case, relieve the brain from pressure, which in the other case proved fatal."

A year later, he reported a third instance of head injury. An Irish laborer had been struck on the head by a billet of wood, in the hands of one of his fellows, 24 hours before. Dr. Turner "found the scalp over and about the parietal protuberance a good deal contused and tumefied, but not much lacerated. He had occasional convulsive movements of the muscles on the left side of the face, which immediately recurred on pressure being made over the seat of injury, which determined the existence of fracture. As there was no violent reaction, and no coma or other ordinary symptoms of compression (the man being conscious throughout except when under the influence of ether), I concluded not to operate at that time." Several days later he saw the man again. "As the convulsive movements still persisted, we determined that it was proper to relieve the brain from the compression which evidently existed. Having made a pretty extensive crucial incision, we found a depression of the bone to the depth of half an inch or more, and the depressed portion somewhat comminuted, but not sufficiently so to enable us to remove the fragments with forceps. We therefore applied the trephine above the fracture, and raised the depressed portion with the elevator, and removed the pieces of bone." The patient made a rapid recovery.

Thus by careful observation of a few patients over a period of 12 years, and by keen appreciation of the meaning of those observations, Henry Turner was able to establish the basic principle of cerebral decompression—that an opening in the skull does not relieve pressure within it unless it is accompanied by an opening in the dura mater. This accomplishment marks him as one of the great clinical observers and thinkers of American medicine.

I have been unable to find any evidence that his ideas had any effect, or that their importance was realized by any one but himself. It was over 35 years later that Victor Horsley, who, in all probability, knew nothing of Turner's observations or even of his existence, made the first deliberate decompression, to be followed by Harvey Cushing in establishing it as an accepted surgical procedure.

SOME WRITINGS ON THE DISCOVERY OF VACCINATION

Library Notes, *Bulletin New York Academy of Medicine*

Jenner, Edward. 1749-1823.

An inquiry into the causes and effects of the variolae vaccinae, a disease discovered in some of the western counties of England . . . and known by the name of the cow pox . . .

London: printed, for the author 1798.

Autograph letter addressed to William Clement, surgeon, of Shrewsbury. September 4th, 1811.

"It is now my wish to collect as many cases of secondary smallpox as I can find by application to my medical friends. There are people in the world so absurd as to suppose that cases of smallpox never occur after either inoculation or the disease taken in the ordinary way. To convince them to what an extent this has happened, is the purpose of an intended publication."

(10 other of Jenner's publications are mentioned:)

Bloomfield, Robert

This tribute to vaccination was written by the shoemaker-poet:

"When the plain truth tradition seem'd to know,
And simply pointed to the harmless cow,
Doubt and distrust to reason might appeal:
But, when hope triumph'd, what did Jenner feel!...
Appea'd the gift that conquers as it goes;
The dairy's boast, the simple, saving rose!
Momentous triumph-fiend! Thy reign is o'er;
Thou, whose blind rage hath ravag'd ev'ry shore."

For preserving beauty from the ravages of smallpox:

"And is it then no conquest to insure
Our lilies spotless and our roses pure?
It is no triumph that the lovely face
Inherits every line of nature's grace?
That the sweet precincts of the laughing eye
Dread no rude scars, no foul deformity?"

Debates in Parliament respecting the Jennerian discovery, . . . together with the report of the Royal College of Physicians of London on the vaccine inoculation . . . . London: 1808,

The investigation of vaccination by the Royal College of Physicians was undertaken at the command of the King, in compliance with an address from the House of Commons. The pages displayed show some of the reasons for the College's support of the new practice.

Worgan, John Dawes

" 'Tis thine, blest Jenner, with suspicious hand,
To chase one demon from the trembling land,—
Avert the fainting babes impending doom,
And rescue nations from the yawning tomb."

Carrick-Moore, James

The history and practice of vaccination . . . . London: 1817,

The author served as Director of the National Vaccine Establishment after Jenner resinged in 1809. The conclusion of this early history of vaccination notes that "this is for the consideration of egislators, who . . . . might in a very short time otally extinguish the small pox," and ends with the lines, "The discovery of Jenner; whose name, or, in strange tongues, a sound imitating his name, is now articulated through the world, in huts, houses, and palaces, a household word."

Moseley, Benjamin London: 18 00.

One of the foremost opponents of vaccination, writers: "Great events are foreboded.—Some pretend that a restive greasy-heeled horse will kick down all the old gally-pots of Galen. Others, that the people of England are becoming like the inhabitants of a wilderness . . . . seen in 1333, by . . . . Sir Hohn Mandeville,—who, he says, were "wild, with horns on their heads, very hideous and speak not; but rout as swine.' "

Lipscomb, George

The distinguished historian, surgeon and physician concludes his observation with the statement that "vaccination ought to be immediately, and for ever, abandoned."

Stuart, Ferdinand Smyth

A physician of Essex lost his infant son through vaccination, describes the fate of a child, who, having been vaccinated, "ran upon all fours like a beast, bellowing like a cow, and butting with its head like a bull."

Waterhouse, Benjamin in Analytical Review for July, 1798.

An account of the first vaccination performed in the United States.

Jefferson, Thomas

Autograph letter signed, addressed to Dr. John Shore.

On December 1, 1800, Waterhouse wrote to Jefferson, sending him a copy of his work on vaccination. Jefferson, interested in the new discovery, replied promptly and gave his whole hearted support.

Seaman, Valentine, New York, 1802, quotes a number of brief articles written by himself and others. The *Mercantile Advertiser,* New York newspaper which published several notices concerning the new discovery, printed, December 30th, 1801, an extract of a letter from Seaman to Waterhouse, dated December 22nd, complains of the opposition of New York physicians to vaccination:

"Indeed such a general apathy seem to pervade the minds of even of those who certainly must be convinced of its advantages, that I have not yet got a single coöperator among them."

Ramsay, David, 1802.

"Vaccination was introduced into Charleston, in February, and in a short time became general . . . . Nothing is now wanting to exterminate the smallpox, but a general and simultaneous vaccination."

National Vaccine Establishment founded in 1808.

The Board appointed by His Majesty's Government to regulate the affairs of this Establishment is composed of the President and four Censors of the Royal College of Physicians; the Master of two Governors of the Royal College of Surgeons.

This copy of minutes of meetings has annotations in the hand of John Birch, opponent of vaccination, dated November 5th, 1809. "Dr. Tenner has since deserted his friends at the Vaccine Establishment, has run away from London and dares not go to Cheltenham, because the smallpox has broken out in several patients vaccinated by himself, and because it is proved he has inoculated his own child with smallpox, not daring to trust his own experiment as a security."

New York Institution for the Innoculation of the Kine Pock 1802.

"A number of citizens of New York liberally contributed towards the establishment of an institute for disseminating the benefits of this new inoculation among the poor, and of promoting a more general knowledge of the disease, and the proper method of successfully communicating (preventing) it.

Smith, James

Performed vaccinations in Maryland as early as May, 1801. He persuaded the Legislature of Maryland to enact a law for the establishment of a vaccine institute in 1809. Although his efforts to found a national vaccine institute failed, he directed the United States Vaccine Agency which was in existence from 1813 to 1822.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

THE USE OF PROSTIGMIN-MORPHINE IN OBSTETRICS

A FAMILY DOCTOR will stop anywhere to listen to a report of a more satisfactory way of easing the pains of labor.

Here is the gist of such a report.[1] I mean to try it out.

This report is based on 100 cases of primigravida. The routine used was as follows: Seconal was given to all patients up to the time of 4 cm. dilatation. One capsule containing 1½ grains of this drug was administered orally at the time of complete effacement and another capsule was given at 2 cm. dilatation. At 4 cm. dilatation one tablet of prostigmin metylsulfate and morphine (M-P) was administered hypodermically and repeated as required to keep the patient completely asleep between pains. In the series of controls, the same procedure was carried out with the exception that ¼ grain of morphine was used instead of the M-P combination.

A detailed chart was kept on each patient to follow the respiration, blood pressure and pulse before and after administration of the drugs. A special chart was kept to record the effect upon the respiratory response of the newborn infant. Also a postpartum chart was kept recording urinary retentiton.

When prostigmin is combined with a small dose of morphine, the relief of pain is as complete as when a larger dose of morphine only is used.

Prostigmin-morphine analgesia is safe and effectivve for the relief of labor pains.

Prostigmin-morphine analgesia produces little, if any, untoward effects on the reflex responsiveness of the baby or on the respiration of the mother.

When prostigmin is used with morphine as an analgesic, postpartum urinary retention is definitely reduced.

1. D. Slaughter, *et al.*, Dallas, in *Rocky Mountain Med. Jl.*, Jan.

UROLOGICAL DIAGNOSIS IN GENERAL PRACTICE

IT is pleasing to find an article by a specialist who believes that a general practitioner is capable of doing some things in the field of his own specialty. It is astonishing to see a statement from a urologist that a cystoscopic examination is a simple procedure. Of course it is simple, and all of us would make cystoscopic examinations but for the cost of the instrument. Let each of us consider seriously the question of putting the money we will save by running our cars for years into equipment for diagnosing and treating our patients' ailments we have been sending to the specialists.

The article[1] mentioned is herewith given in abstract:

Acute right-sided seminal vesiculitis is still occasionally mistaken for appendicitis, the diagnosis being missed because someone failed to take a careful history, perform a rectal examination, or both. The possibility of this type of pain having its origin in the urogenital system occurs late in the minds of many physicians.

Possibly 70% of chronic lesions of the upper urinary tract manifest their initial symptoms in other systems of the body, principally the gastrointestinal tract. Prostatism with its frequency, tenesmus, dysuria and dribbling is still called cystitis or Bright's disease by many. Appendectomy often precedes the discovery of right ureteral disease, particularly complete obstruction from stones

1. V. C. Laughlin, Cleveland, in *Ohio Med. Jl.*, Jan.

or other causes. The urine analysis is often negative in these cases, the sample of urine coming from the well side only.

Perhaps 70% of tumors of the kidney in adults bleed. There remain 30% in which attention is not particularly directed to the urinary tract. The so-called embryoma or Wilms' tumor of the kidney in children bleeds in only 15% of cases which leaves 85% devoid of this telltale symptom. A goodly share of bladder tumors have no macroscopic blood in the urine until the condition is well advanced.

An orderly, progressive scheme of examination will result in a correct diagnosis in 95% of cases presenting themselves to the physician with urological symptoms.

The history should be very carefully taken. A number of patients have no symptoms referable to the urinary tract when suffering with serious, even advanced disease of that system.

The tabetic bladder presents a history closely simulating the symptoms of prostatic enlargement. Serologic and central nervous system findings and cystoscopy suffice to diagnose.

Tuberculosis in the genitourinary tract is a great imitator of other less serious diseases. History of pulmonary symptoms in the patient, members of his family, or roommates are all points of importance. History of the passage of blood clots suggests early tuberculosis of the kidney and attacks of renal colic may frequently be the initial symptom of this disease, thus confusing tuberculosis with calculous disease, tumors and simpler types of infections.

In calculous disease the history is of exceptional value. A patient who has passed a stone is more apt to again develop this condition.

Hematuria may result from trauma, thyroid disease, sepsis, scurvy, systemic disease and certain blood dyscrasias such as hemophilia, hemorrhagic disease of the newborn, purpura, polycythemia, leukemia and various anemias. It may be the result of disease of neighboring viscera or the genitourinary tract itself.

Hematuria may be painless, painful, total, affected by movement.

Painless in early malignant growth of the bladder, benign prostatic hypertrophy, traumatism, polycystic kidneys, acute renal congestion, the so-called essential hematurias and aneurysm of the renal artery which is fortunately rare.

Painful usually with cystic symptoms in carcinoma of the bladder, vesical calculi, carcinoma of the prostate, renal tuberculosis, malignant growths of the renal pelvis and bilharzial infections.

Total with renoureteral colic, the result of ureteral or renal calculi, carcinoma of the ureter or renal pelvis, papillomas of the ureter or renal pelvis, hypernephroma or malignant growth of the kidney; renal tuberculosis, leukoplakia of the ureter or renal pelvis.

Affected by movement, especially vesical calculi growths close to the vesical sphincter.

When pyuria persists following ordinary measures of therapy, particularly when hematuria accompanies or red cells are numerous advanced diagnostic procedures are in order. A diagnosis of pyuria is made when 7 or 10 polys to h. p. field.

Keep in mind the possibility of congenital abnormalities.

The history of renal colic must be carefully worked out as to frequency of attack, amount of pain, tenderness and rigidity, position of the pain, whether or not referred, whether accompanied by frequency, hematuria, nausea or vomiting.

Syphilis is diagnosed by history and laboratory tests; the physical signs must be looked for in every patient and the proper neurological tests applied.

Anemia and shock must be looked for. Always examine for extravasation of urine; it may be present without any complaint on the part of the patient.

The pathological kidney of any type is quite often discovered by bimanual examination, particularly when conducted in the upright position.

Bilateral abdominal tumors are very likely to be large kidneys, usually congenital, often polycystic kidneys.

Central abdominal tumor, especially in the old man, usually turns out to be an enormously distended bladder. The aseptic catheter is the instrument of diagnosis, taking 24 hours to withdraw urine.

Prostatic hypertrophy, syphilis, neurogenic bladder—all with residual urines—must be kept in mind. Check the residual urine in females. They are as subject to bladder neck changes as are men. Be aware of the reflex inhibition to the act of urination—the result of tuberculous peritonitis.

The abdominal and loin tumors in the newborn may all recede when the pinpoint meatus is corrected. Obstructive hydronephrosis, hydroureter, distended bladder and dilated urethra may occur simultaneously in the same baby the result of this simple abnormality. Death may follow soon after birth unless the obstruction at the meatus is relieved and the back pressure upon the upper urinary tract eliminated.

The rectal examination embraces the following urological considerations:

1. Character of sphincter (neurological significance).
2. Membranous urethra.
3. Cowper's glands.

4. Prostate and vesicles: size, contour, consistency, tenderness and intervesicular plateau of induration.
5. The prostatic secretion.

To perform a fine physical examination, particularly in a man past 50 years of age and omit rectal examination is inexcusable.

Prostatic carcinoma can be felt by rectum, occurs not rarely in those in their forties.

Failure to discover urethro-vesical enlargements of the prostate per rectum does not insure their absence.

It is the duty of the general practitioner to recognize the very early changes characteristic of prostatic carcinoma and assign to proper treatment. Pain is a prominent symptom in 65% of the cases, the initial symptom in 10%. Acute retention occurs in 43%, the initial symptom in only 5%. In 8% of cases of the first symptoms experienced were produced by metastatic growth, along the lymphatics of the nerves in most instances, frequently passing to the bones of the spine and pelvis and the long bones. Sciatica, neuralgia, rheumatism and backache in men past 40 should arouse suspicion in the mind of the careful diagnostician.

Preliminary röntgenogram, a full length exposure of the uninjected kidneys, ureters and bladder, the patient properly prepared, affords valuable information.

Intravenous pyelography is not to be employed at random; contraindicated in advanced renal destruction, with severe uremia, severe liver disorders, exudative diatheses, in children, and should be used with caution in cases of hyperthyroidism, tuberculosis and hypertension, in the very young and the very old or infirm.

The estimation of residual urine is convenient toward the end of the examination. Empty the bladder completely, keeping 2 or more glasses for routine examination. In the absence of neurological lesions, the amount of residual urine is in direct proportion to the degree of obstructive changes which exist in the posterior urethra and at the bladder neck.

Tests of renal function:

Simplicity and accuracy of psp and the indigocarmine test make them quite reliable. The quantity of fluid output reveals much.

Tests of retention in mild, early lesions of the kidney are of little value. Creatinine is the least variable factor. Retention beyond three mgms per 100 c.c. of blood is grave, and readings beyond 5 mgms almost invariably hopeless. In *obstructive lesion,* creatinine readings may reach 12 or even 14 and the patient recover after the removal of the obstruction. Obstructive lesions may superimpose themselves in cases where medical nephritis already exists. Early in the illness it is better to depend on tests of excretion, whereas later the tests of retention are more helpful.

Too often the physician is embarrassed by not having made a cystoscopic examination, when he finds later that some relatively simple disorder could have been readily discovered and corrected through this simple procedure. The time to determine the source of the bleeding is at the time of the bleeding not after it is stopped. Hematuria demands cystoscopy.

RHINO-OTO-LARYNGOLOGY

CLAY W. EVATT, M. D., *Editor*, Charleston, S. C.

THE TREATMENT OF ACUTE OTITIS MEDIA

AN ARTICLE under this title in the *Nebraska State Medical Journal* Nov., 1941, by Dr. Lyman Howard Heine, states that "all cases of acute otitis media find their origin in the nasopharynx." This is true except for a few rare cases which do not concern us at this time. Therefore, "it is the first rule in treatment of otitis media to direct that treatment against the nasopharynx." Yet one is not infrequently surprised by some otherwise well informed-referring physician, showing a vague recollection of nasopharyngeal anatomy. "Medication may be instilled with the medicine dropper or on a properly curved applicator." It seems that nose drops are the medication of choice especially in children. Merely the passing of medicine along the lining membranes does not achieve the fullest effect desired. The patient may lie across the bed or mother's lap with the head in extreme extension entirely upside down just as though he were standing on his head. Then several drops are instilled, this position being maintained four to five minutes so that the pharynx, sinus ostea and eustachian tube ostea absorb enough of the medicament to get its fullest physiologic effect. The mucosa of the sinuses is for all practical purposes identical and continuous with that of the nose and is inflamed along with the rest of the upper respiratory tract. The drops should contain ephedrin or other vasoconstricting agent to lessen the edema and bring about aeration. Ephedrin 0.25% in normal saline does quite as well as stronger percentages, also untoward reactions are less likely from the weaker strengths. Cocaine ½% in a light oil is dehydrating, soothing and bacteriostatic, and is indicated where there is no danger of oil getting into the lungs. Silver preparations have been used extensively in recent years. Their danger of course is that the mother continues their use indefinitely

and invites argyria. Probably the most satisfactory drug is a combination of mild germicide and vaso-constricting agent in normal salt solution. Glucose combinations are very satisfactory. During the acute otitis inflation is contraindicated.

The old proverb, a picture is worth a thousand words, applies to teaching the patient or mother how to hold the head while instilling nose drops and how to correctly blow the nose. If the nose is to be blown both nostrils must be open. Against an obstructed nostril, blowing, coughing, sneezing, or crying blasts and squeezes infected material from the nasopharynx into the middle ear. It is more physiologic to hawk than to blow.

An insight into disease of the middle ear can be gained by following the appearance of the membrana tympani. In the very earliest stages of infection ear drops may aid in aborting the otitis. In the earliest stage a glycerine and acetanilid drop will decrease the hyperemia and lessen the pain. This is unsafe after a few hours because the earache is relieved and the patient does not return promptly for observation. These drops have found too great a use by those who do not understand the pathoogy of the middle ear, and in their misuse the disease process has gone on to necrosed drums and mastoiditis, while under a feeling of false security. Once the light reflex is lost and serum is forming, the sooner a clean clear-cut myringotomy is performed the better are the chances of getting an early closure and a perfectly functioning ear.

In the earliest stages of hyperemia 10% cocaine in adrenaline may give temporary relief.

To continue with drops after serum or pus is formed is to invite rupture and sloughing of the drum, longer period of discharge, permanent perforation of the drum, mastoiditis or meningitis.

At the first visit diet and hygienic orders should be given. Salicylates and opiates are not used as much as formerly. For most upper respiratory infections (from which otitis media is an extension) sulfathiazole is an excellent shortgun prescription to be continued unless culture proves another of the sulfa groups to be indicated.

Dr. Heine says "I shudder to think of men who determine whether or not they are through the membrane by feeling the knife strike the promontory through the drum." To do myringotomies with such disregard of anatomy is criminal. This promontory is the very thin covering of the first turn of the cochlea and is in close relation to the spinal fluid, and one pneumococcus carried into the spinal fluid on the edge of the knife can result in a full-blown menengitis."

A wound heals better if kept dry. We can not expect the middle ear to return to its normal state if the pus is allowed to remain in the canal or if the ear is subjected to repeated irrigations. No solutions are to be employed until the discharge begins to thicken. Then, after the ear is thoroughly cleansed, use one or two cotton wipes dipped into one-third aqueous solution of Merthiolate 1-1000, and two-thirds alcohol.

Occasionally in the early stages an irrigation one-third alcohol not oftener than twice a day will keep the edges of the incision well open. Likewise in cases where the dry technique can not be followed by the mothers, irrigations are better than allowing pus to remain in the canal, providing the ear is dried following the irrigation.

A PYREXIA TEST: DIFFERENTIATION OF "FUNCTIONAL" FEVER FROM THAT OF INFECTIOUS ORIGIN

(M. F. Fox, Milwaukee, in *Wisc. Med. Jl.*, Jan.)

The persistence of a mild fever in a child after apparent recovery from an infectious disease is occasionally observed. The daily rise rarely exceeds the normal by more than 1° F., but is of genuine concern to family and physician.

The patient is first given a series of four 3/5 gr. doses of a coal tar antipyretic, at 4-hour intervals, an dthe t. recorded every 2 hours. The usual response is a fall in t. within 2 hours after each dose, and a subsequent rise by the end of 4 hours. The patient is then allowed a period of 24 hours for the elimination of the antipyretic drug, and is then given a dose of 1/6 to ⅛ gr. of morphine sulfate hypodermically. The temperature is recorded every 2 hours for the following 24 hours. If the t. remain normal or subnormal for a period of 10 to 18 hours, it is assumed that the fever was not the result of infection, and the patient is to leave his bed and resume normal activity. After a suitable period of adjustment at home, he is returned to school and normal social contacts. If a history of idiosyncrasy to morpine, dilaudid or a barbiturate may be used for the test.

Five cases are described in which this fever was abolished by administration of sedatives and were apparently without infectious basis.

It is recommended that in all cases of fever prolonged two weeks or more beyond the convalescent period, the pyrexia test should be tried as a first step in the investigation. Patients in whom the fever appears to be "functional" may be allowed to desume normal activities without harm.

PUBLIC HEALTH

N. Thomas Ennett, M.D., *Editor*, Greenville, N. C.

MILESTONES IN NORTH CAROLINA PUBLIC HEALTH

(Continued from last month)

1907 Two thousand dollars appropriated for the State Laboratory of Hygiene. Pasteur treatment provided. State Sanatorium for treatment of tuberculosis founded; $15,000 appropriated for improvements and $5,000 maintenance. A law requiring the separa-

tion of tuberculous prisoners from other prisoners was enacted. Annual appropriation, $4,000.

1908 January 1, Dr. C. A. Shore became Director of State Laboratory of Hygiene. Annual appropriation, $4,000.

1909 General Assembly provided for (1) a whole-time State Health Officer; (2) collection of vital statistics of towns having a population of 1,000 or over; (3) that all public water companies file plans and specifications of their plants with the State Board of Health, and that the State Board of Health pass necessary rules and regulations for the care of public watersheds, etc. (4) that counties provide free diphtheria antitoxin for county indigents, and (5) that the maintenance appropriation for the Sanatorium be increased to $7,500 and $30,000 be granted for improvements. Dr. Richard H. Lewis resigned as Secretary of the Board, and Dr. W. S. Rankin was elected as his successor, beginning his official work July 1. Annual appropriation, $10,500.

1910 *Bulletin* increased from 3,500 edition to 10,500 edition. Dr. John A. Ferrell elected, February, Assistant Secretary for Hookworm Eradication; began work under State Board of Health and Rockefeller Sanitary Commission.

1911 Legislature established county boards of health to take the place of the county sanitary committees; county board of health composed of chairman board of county commissioners, county superintendent of schools, mayor of county town, and two physicians selected by the three county officials to serve with them. Legislature also abolished quarantine for smallpox and improved the quarantine laws. One thousand dollars annually appropriated to contract with antitoxin manufacturers for state supply of high-grade diphtheria antitoxin, with result that price of antitoxin was cut to one-fourth former price, saving the citizens of the state over $30,000 annually. *Bulletin* increased from 11,500 copies to 20,000 copies each edition. Thousands of school children found infected with hookworm and treated. Strong sentiment began to make itself felt for better health work by counties, four counties employing whole-time county health officers. Guilford County —one of the four—began its work June 1 and was the first county in the United States to inaugurate full-time county health work. Maintenance appropriation for State Sanatorium increased to $12,500 with $20,000 voted for improvements. Annual appropriation, $22,500.

(To be continued)

OBSTETRICS

THE MANAGEMENT OF THE BREECH

W. A. Coventry, Duluth, in *J. Lancet*, Jan.

Five per cent of all deliveries are breech. Previous to 1921, Boston statistics showed fetal mortality rate was 12%. Since 1921, with the traction method in delivery of the breech the rate has dropped to 5%.

The mortality rate in the breech should not be higher than in cephalic presentations. If the fetus is large disproportionately to the pelvis, cesarean section is in order. The indication should be the same in breech as in cephalic presentation.

In deliverery by the breech I know of no method that equals the method taught by the Potters of Buffalo.

No attempt should be made to deliver until there is complete dilation of the cervix or a cervix which is completely dilatable.

The second essential is complete anesthesia. Potter uses chloroform. The ordinary ether method or ether and gas will give complete anesthesia.

The third step comes in ironing out the perineum, with a hand in a glove of elbow length. With very generous use of tincture of green soap, first introduce the finger into the vagina, then two fingers, then three fingers and finally the entire hand, and gradually and thoroughly knead out the muscles of the perineum.

When the entrance is easy to the vagina get a foot or both feet and bring down; when the feet are fully extended upward and the full buttock presents itself, one may have to flex the knee so as to bring down the first foot. Also, if it is difficult to bring down the second foot, one does not have to do so. Traction may be used on one foot, but it is certainly neater and better if one can bring both feet down. It is well to hold them about the ankle with one hand, using very slow downward gentle traction. The Walcher position is recommended. The buttocks, in practically all cases, will turn and be delivered by slow gentle traction posteriorly. At this point if one is using for traction only one leg, then he may bring down the other leg very easily. In traction never place the hands upon the thighs of the fetus, but always continue with steady downward traction with the hand or fingers about the ankles. If the traction

is slow and steady there is no danger of any dislocation or fracture of the hip.

As the buttocks are delivered posteriorly, traction is continuous, the body gradually turning so that the back is anterior. Steady traction is then maintained until the umbilicus is delivered. The cord may be pulled down slightly to make sure it is not being impinged upon. Traction is further continued slowly and steadily, but not strongly. *As a shoulder presents anteriorly traction by the feet ceases.* The shoulders and arms are delivered by pressure on the angle of the scapula of the anterior shoulder directing the pressure upward toward the spine of the fetus. The arm then will very readily slide out posteriorly, after the anterior arm and shoulder have been delivered.

With both hands, the trunk is rotated so that the other shoulder appears anteriorly and the second arm is delivered by pressure upon the posterior part of the scapula, raising the scapula up, the arm sliding out posteriorly. The same maneuver works well if the arm is extended over the head as both arms and shoulders delivered. The delivery of the head can take time. The index finger of one hand is introduced into the baby's mouth, pressure exerted from above downward on the head and the head is delivered in the line of the natural curve of the pelvis, the finger in the baby's mouth acting as a guide only. If, however, undue resistance is met, Piper's forceps deliver very easily. Episiotomy seldom appears necessary.

Never press on the fundus until the arms are delivered.

Never attempt to deliver arm or shoulder by presure over the shoulder or clavicle.

Never use traction on the baby's neck.

Take your time. Fifteen minutes is not too long.

Deliver the buttocks posteriorly.

Deliver each shoulder anteriorly.

After the arms are delivered guide the head slowly through the pelvis by pressure from above, and, if necessary, apply forceps.

Never use traction by putting the hands over the baby's shoulders.

INTERNAL MEDICINE

GEORGE R. WILKINSON, M. D., *Editor*, Greenville, S. C.

THE PRESENT STATUS OF HORMONE THERAPY

The busy practitioner of medicine has a troublesome task is arriving at facts as to endocrine diseases and hormone therapy.

Max Hoffman, St. Paul, in *Minn. Med.*, Jan.

If we should exclude thyroid diseases, diabetes mellitus, and menopause in women, the incidence of diagnosable endoctrine disturbances is slight. Also within the group in which we are able to make a diagnosis of endoctrine disease there are many conditions which cannot be treated by hormone therapy.

The promiscuous use of endocrine substances is wasteful and harmful and serves to bring discredit on this form of therapy.

The pituitary, the master gland, through its various hormones controls the activity of the other endocrine glands in the body. The clinical value of the hormones of the posterior lobe is established. The anterior lobe is said to produce seven or more hormones, only two types are available—the growth hormone, and the gonodotropic (sex-stimulating) hormone.

The growth hormone. Results are not spectacular, but indicate that this therapy is not without value, started early in life, kept up intermittently for as long as two years.

The gonadotropic hormones. Three main types:

1. Anterior pituitary gonadotropic, (from the gland itself, or from the urine of castrates, or menopause urine.)
2. Pregnancy urine gonadotropic (A.-P.-L. or chorionic gonadotropin).
3. Pregnant mares' serum (equinin).

These three gonadotropins vary in action. No. 1 is capable of stimulating the ovary in the absence of the pituitary gland, whereas No. 2 has little ovary effect if the pituitary is intact, and none of it is destroyed. No. 3 has more the action of No. 1 than of No. 2.

No. 2 is of little value to stimulate the ovary. Very large doses may be of value in gynecological conditions. More promising but still rather ineffective in gynecologic cases is the use of No. 1. No. 3 runs second. Ovarian-stimulative therapy is not very effective.

More promising still not spectacular is the effect of these hormones in stimulating maturation in the male.

All the gonadotropins will maintain spermatogenesis after the pituitary gland has been ablated, if given early. Of little, if any, value in oligospermia or aspermia.

Main lack in parathyroid deficiency is a lowering of serum calcium, which causes tetany and a train of symptoms. In milder cases, calcium with viosterol is all that is necessary. In severe cases the natural hormone extracted from the gland, or the synthetic hormone, dihydrotachysterol, is effective.

Dihydrotachysterol, now generally preferred,

orally 5 to 10 c.c. will cause a satisfactory rise in blood calcium in three to nine days. Often two to 6 c.c. a week will maintain a normal calcium blood level, excessive dosage will raise the blood calcium so high as to cause the formation of calculi in the kidneys and produce calcinosis in other organs.

Epinephrine use is well known. No single hormone of the adrenal cortex, extracted or synthetic, supplies all the functions of this organ.

The natural adrenal cortical hormones are expensive and their use should be restricted to definite cases of Addison's disease. Often in milder cases a restriction of potassium and an increase of sodium in the diet may give a satisfactory result without hormones. In some cases of adrenal cortical insufficiency the hormone is necessary only during infections, or before or after operation.

The only synthetic adrenal hormone now on the market is desoxycorticosterone (supplied under different names). Overdosage may be serious.

Ovarian hormones are two types: the estrogenic or endometrial poliferative and the luteal or secretory. These hormones with the gonadotropic hormone of the anterior pituitary gland control the menstrual cycle.

There are only two indications for the use of estrogens in therapy: gonorrheal vaginitis in children and the menopause—by injection, by inunction and by the oral route. Choice determined by the expense or by the need for a quick response.

The other ovarian hormone, progestin or progesterone, is produced by the corpus luteum. The only indication is in cases of threatened or periodic abortion. Injectable or oral forms.

The male hormone available as testosterone propionate for injections or for cutaneous application, or as methyl testosterone in tablets for oral use, stimulates development of the male secondary sex apparatus. Its effect disappears when the hormone is discontinued. It is valuable in cases of castration in young males; also in adults who have lost their testicular function and suffer from this loss.

The use of this hormone in children is rarely justifiable unless the testes have been destroyed by accident or disease. It can produce atrophy of the testis when it is administered to an individual with functioning gonads.

It is not effective in stimulating spermatogenesis; most of the evidence shows that it inhibits sperm formation and development.

Hormone therapy is, for the most part, substitutive therapy, and inasmuch as it is usually a very expensive form of treatment for the patient, it should be administered only when there is a clear-cut indication for its use.

DERMATOLOGY

J. Lamar Calloway, M.D., *Editor*, Durham, N. C.

USE OF THE PATCH TEST IN DERMATOLOGY

Most physicians are familiar with the use of intradermal and scratch tests in the diagnosis of various forms of generalized and cutaneous allergy, but only a few have had experience in the use of the patch test. An effort will be made to define the technique, uses, and limitations of the patch test.

The patch test's main function is to determine whether or not a suspected substance is responsible for the occupational or contact dermatitis with which the patient is suffering. Care must be taken to avoid the use of primary irritants locally since positive tests in such cases are of absolutely no value. Control patch tests must be done on normal individuals to be sure that the dilution and concentration used is not in itself a primary irritant which would produce a positive reaction in any subject. Whereas the patch test is invaluable in establishing the causative factor in most industrial or occupational dermatoses, contact dermatoses due to clothing, leather, dyed materials, plants, etc., it has no value in determining the etiologic factors in such things as urticaria and other of the strictly allergic dermatoses.

Of solid materials such as leather, clothing etc., a piece of the suspected material a cm. square is placed in direct contact with the skin, covered by a piece of cellophane two cm. and the cellophane then covered with a piece of adhesive tape four cm. square. It is often necessary to test both the inside and outside of the suspected material since different finishing materials, dyes, etc., are sometimes used in varying dilutions on the two sides. In testing plants and flowers to test petals, leaves and stem. In testing fruits, test juice and inner and outer rind. In testing soaps, paints, fruit juices, lotions and various other solutions, a piece of linen or gauze a cm. square may be saturated in the suspected solution and the patch test performed as outlined previously, using cellophane and adhesive tape.

The patch test is left on for 24 hours after which it is removed and read. A positive test is indicated by the presence either of erythema (1+), erythema and vesicles (2+), bullous reaction (3+), actual hemorrhagic necrosis (4+). This method of reading tests is a personal equation to be worked out by each individual physician. Positive patch tests should not be confused with the reaction to adhesive tape that some patients de-

velop, since the suspected substance will produce changes only in the circumscribed one-centimeter area, whereas the adhesive tape reaction will follow the outline of the adhesive.

Standard dermatologic texts and articles by Sulzberger (1), Shelmire (2), Weber (3) among others give usual irritants and strength of materials that may be used for patch testing. A list of such materials and dilutions for testing cannot be included in this article.

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THE FIVE-DAY TREATMENT OF SYPHILIS

(H. Rattner, Chicago, in *Ill. Med. Jl.*, Jan.)

The most significant new development in syphilis is the 5-day massive dose therapy for early cases first used in 1933 at Mt. Sinai Hospital, New York, this treatment was started at the Cook County Hospital in August, 1940.

The treatment requires no special preparation of the patient. The diet is the ordinary ward diet.

Mapharsen has been used, 0.24 grams dissolved in 2000 c.c. of 5% glucose solution in triple distilled water for the day's supply. In five days the patient receives 1.2 grams of mapharsen. The dosage is the same regardless of weight, age or sex of the patient. The day's supply of the solution is made up in the morning, and with a short 20-guage needle, the solution is introduced into a vein and permitted to flow at the rate of 40 to 50 drops per minute. A vein of the dorsum of the hand is selected, the needle transfixed with adhesive tape and the hand immobilized by strapping with tongue-blades anteriorly and posteriorly to permit free motion at the elbow. A different vein is selected each day, but the same vein has been used two and three times. At the end of the day's treatment (7 to 8 hours), the patients are permitted to be out of bed.

One hundred seventy-five patients with early syphilis have been treated since August, 1940, by means of the intensive intravenous drip method with mapharsen. Clinical results are reported for the first 80 cases, 14 of which have been dropped from the study.

Relapses have occurred in three patients, and probably in the fourth.

There have been two patients with reinfections and two others with possible superinfections.

In six other cases the results were considered unsatisfactory when last seen.

In six patients treated during the seronegative primary stage of syphilis, the blood tests gave persistently negative reactions.

All of the cases in which relapse occurred had been treated originally for an eruption of secondary syphilis.

Reactions encountered included one case of hemorrhagic encephalitis, and another with a single convulsion. Phlebitic pain in the arm, nausea, emesis and slight headache were encountered frequently but in general were of minor importance.

There were no cases of exfoliative dermatitis, hepatic or renal damage, blood dyscrasias, embolus, or nitritoid reactions, and no fatalities at the Cook County Hospital from this method of treatment.

This method shows great promise, it must still be considered as in the experimental stage, for cerebral complications have been encountered and fatalities have occurred in other centers. We have reports of 15 cases which have been observed for a 5-year period. It seems likely that the introduction of the intensive intravenous drip method of treatment may well prove to be the most significant advance in the treatment of syphilis since the introduction of arsenic.

HOSPITALS

R. B. Davis, M.D., *Editor*, Greensboro, N. C.

AT LAST

It isn't the desire of the editor of this department to say to any individual or to any group of individuals, I told you so. But he does entertain a secret satisfaction that things have come to pass according to his prediction as far back as 1930. At this time he read a paper before the North Carolina Hospital Association meeting at Gastonia in which he pled with the Nurses Standardization Board that they would not increase too rapidly their requirements and demands upon hospitals that wished to run a training school. He warned them at this time that if their demands were not conservative many of the smaller hospitals would have to close their training schools.

On January 5th the front page of *Life* had a picture of a nurse in uniform which portrayed what a beautiful and noble profession should be open to the young womanhood of our country. I, for one, gazed in silent reverence at this picture and was grateful for the opportunity that had been mine over a number of years to help, in a small way, to increase this wonderful army of nurses, even if it was in a small training school. The nurses and the doctors of our country bear a greater responsibility than that of producing tanks, airplanes, ships bombs, or any other war material, because few soldiers will willingly don a uniform and march to war without the conviction that the nursing and medical profession will give the service of treatment to the sick and wounded.

Five letters and two words brought sadness and grief to my heart. They were "50,000 nurses wanted." We do not have 50,000 nurses available to offer our country during this defense. This means that your son and mine, your brother or perhaps your sweetheart, will lie upon the battlefield or in the hospital ward and suffer for nursing care. It shames me that I was not more persistent in the campaign that I and others waged to prevent this shortage of graduate nurses. However, we will not dwell upon the theme—

Of all sad words of tongue or pen,
The saddest are these: it might have been.

Hospitals! large and small! now is your golden opportunity to serve the civilians of our country and the soldiers who are protecting our homes. For utter destruction of the enemy, let us rise up in a body and carry a banner of success and service by reopening every possible training school that is capable of training efficient nurses. Let us cease dilly-dallying about with the trivial and minor points of technique and look forward to the bigger things of life and the more practical application of knowledge. It is a provision of the Almighty that every human being is endowed with much good and some intelligence. It matters very little whether that intelligence is manifested through a group of five or of fifty nurses in lecture hall and in wards. It is the instruction that each individual nurse absorbs to herself, enabling her to put forth the best that is in her, rather than the number of students in the lecture hall or patients in the hospital.

I now call upon the Nurses' Standardization Board to rally around this movement and make sacrifices where sacrifices are necessary, to make exceptions where exceptions would perform services to the community or the defense of our country. I call upon them in the belief that they will not fail since Pearl Harbor has opened everyone's eyes to the ravages of the enemies of our form of government.

Nurses, hospitals and doctors must as one push forward with every ounce of our energy to supply that urgent need that is portrayed in the picture on the front of *Life*. We should be proud that such a wonderful opportunity is presented us. It should make our chests swell with pride and our hearts fill with sympathy to realize that now, as never before, coöperation between opposing factors is demanded by the serious situation in which we find ourselves.

As something concrete, I offer to all who are concerned the following setup. Let the Standardization Board meet with a committee from the N. Carolina Hospital Association, the North Carolina Hospital and Training School for Nurses Association, and the North Carolina Medical Society. That this committee be not too large, but especially that the members of this committee be carefully chosen for their familiarity with the situation and their zeal for the cause. I further recommend that this joint committee meet as soon as possible and that they seriously discuss and analyze the following rules to be set up by the Standardization Board for the training of nurses:

1. Age limit for entrance, 18.
2. A diploma from any high school authorized and recognized by the North Carolina Board of Education.
3. A certificate of high moral character.
4. A physical condition that will be sufficient to carry her through three years of training.

This much for the applicant:

For the hospital:

1. That the hospital be approved by the American College of Surgeons, the American Hospital Association, or of such standard that it would be eligible if it applied, this to be decided by the Nurses Standardization Board.
2. The hospital to be allowed the number of nurses in ratio to patients as recommended for the large hospitals at the present.

It is easy to see that the individual nurse would get just as much experience and instruction in the smaller hospitals as she would in the larger hospitals.

3. That hospital living quarters for nurses satisfactory to the North Carolina State Board of Health be accepted as satisfactory.
4. That the present arrangement of sending nurses to a college in the vicinity to complete didactic work be discontinued. A student nurse had far better be nursing in the wards than to be getting information of very questionable value to her.

Let no member of this committee be guilty of petty professional jealousy or any other small narrow-minded action, thought, or deed.

TUBERCULOSIS

J. Donnelly, M. D., *Editor*, Charlotte, N. C.

WAR INJURIES TO THE CHEST: DIAGNOSIS AND TREATMENT

Surgical procedures for the management of empyema have become more applicable and refined, and surgical collapse has achieved great success in many cases of pulmonary tuberculosis which otherwise have become hopeless. Thoracoplasty is now performed all over the world, and the removal of mediastinal tumors has become a much safer operation. It is now possible to remove a lobe of the lung, or even a whole lung, thus offering a means of control of the fairly common cancer of the lung. Better results in chest surgery have been facilitated by the improvements and refinements in the use of inhalation anesthetics.

All this added knowledge has become of great value in caring for war injuries to the chest, many of them caused by the detonation of explosive bombs. George M. Curtis, in a recent issue of

Diseases of the Chest discusses these injuries under the following headings: (1) concussion of the lung; (2) thoracic hemorrhage from penetrating wounds; (3) pneumothorax in thoracic injuries; (4) emergency management of open chest wounds; (5) crushing injuries of the chest; and (6) injuries to the heart and mediastinal structures.

Concussion of the lung as a result of the detonation of high explosives was seen in World War I, but it was not understood, and was then considered as one of the train of symptoms called shell shock. Seen often during the bombing of London, it has been carefully studied by the British, who have applied the name of blast injury, as the condition seems to be due to pressure effects of the *blast wave* following the going-off of a high-explosive bomb. A momentary high pressure is promptly followed by one of negative pressure. After the explosion of a 125-pound bomb, the air pressure may be as high as 200 pounds per square inch, while at a distance of fifty feet the pressure may not exceed 10 pounds. The resultant lung injury may be due to a sudden distention of the lung alveoli with rupture of the capillaries by the suction wave; or the injury may be directly due to the impact of the pressure wave on the collapsible chest wall. The latter is supposed to be responsible for most of these injuries. The treatment of such injuries is oxygen therapy, and absolute rest to save the hemorrhagic lung from additional injury.

The author says that wounds of the thorax causing hemorrhage may be either intra- or extra-thoracic. The first of these affects the chest wall, while the second affects the heart pleura, lung or diaphragm. Wounds on the chest are to be managed by packing or ligation of a vessel; wounds of the lung substance by opening the chest wall and suturing the lung under direct vision. Penetrating wounds of the thorax with a small opening in the chest wall may cause pneumothorax. In such cases, hemorrhage from the central lung zone is best controlled by compression of the lung substance. Since the pressure in the plumonary circulation is only one-sixth that of the systemic, little compression is required to control this type of hemorrhage.

Several serious complications are not in open chest injuries. First, tension pneumothorax, in which injured tissues act as a one-way valve, allowing air to enter the pleural cavity and preventing its escape. This causes collapse of the lung to a dangerous degree and pressure on the mediastinum, sometimes causing emphysema. Tissue emphysema frequently occurs when the parietal pleura is injured, but rarely proves fatal, though it spread over a large part of the body; the most serious result of this is the pressure effect on the great vessels of the thorax.

It seems that the most dangerous complication of chest injuries is mediastinal flutter. In the case of open chest injury, the mediastinum is drawn toward the unopened side on inspiration and, if expiration is violent, as it usually is, the air escapes so slowly by the trachea that the mediastinum is forced back toward the opened side. The exchange of air in the unopened side is much lessened, and as the heart is violently tossed back and forth, the vena cava and pulmonary veins are obstructed so frequently that the heart shuts off its own blood supply. Mediastinal flutter, if not corrected, by stiffening the mediastinum by means of chest surgery will rapidly go to a fatal termination. The author says that the emergency management of open chest wounds consists of, first, control of hemorrhage, and then the reestablishment of the negative pressure relationships of the pleural cavities, by applying an airtight rubber pack over the open wound, under which treatment the patient will usually quickly regain normal respiratory rhythm and can then be transported to a hospital for thoracic surgery.

Crushing injuries of the chest occur frequently in civilian life as a result of blows, falls, automobile, airplane or railroad accidents, accidents in mines, and in crowds caught by fires or other disasters. In war crushing injuries result from the caving in of trenches, bomb shelters, or buildings.

The author groups these injuries as follows: (1) contusions and non-penetrating wounds of the soft parts; (2) concussion of the lungs; (3) injuries causing interference with respiration; (4) injuries causing considerable hemorrhage; (5) multiple section fracture of the ribs; (6) injuries to the heart and mediastinum; and (7) combined thoracic and abdominal injuries.

It is noted that patients with crushing injuries to the chest are usually in shock when first seen and so the seriousness of the chest injury is masked. On recovery from shock the nature of the injury may be seen. In multiple fractures of the ribs rigidity of a large part of chest is lost, and hence rapid control of hemorrhage and stabilization of the chest wall with a firm dressing and strapping, with oxygen administered by nasal catheter are indicated.

Combined thoracic and abdominal injuries require emergency treatment of the chest injuries, then exploration of the abdominal injury. Later reconstructive chest surgery may be done. Injuries to the heart and mediastinal structures are not necessarily fatal. There are no symptoms for several minutes; later there is exhaustion and loss of consciousness. At first bleeding is profuse, but when

200 to 300 c. c. of blood has accumulated in the pericardium, the heart contractions weaken because of the pressure and the hemorrhage ceases. The treatment consists of rapid incision into the pericardium and evacuation of the accumulated blood, followed by suture of the heart wound.

The author notes that more attention has lately been paid to contusion of the heart muscle by steering-wheel accidents, mine cave-ins, bomb blasts, etc. Initial symtpoms in patients who survive such accidents are transient collapse, precordial pain, dyspnea and palpitation. Later signs are weakness and muffling of heart sounds from pericardial effusion, changes in heart rhythm, and a persistent tachycardia with a normal temperature. The treatment for this condition is extended bed-rest, hith the proper symtomatic treatment.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

GLAUCOMA SIMPLEX WITHOUT INCREASED INTRAOCULAR TENSION

THIS CONDITION, while not frequent, is often enough reported to challenge the alertness and diagnoctic acumen of all oculists.

Normally the intraocular tension of the human eye varies between 118 and 25 millimeters of mercury on the tonometer. A tension maintained above 25 and as low as 27 to 30, in the absence of other definite clinical evidence of glaucoma, justifies a diagnosis of glaucoma simplex, and a searching analysis is in order by many investigations over a period which would permit of tension findings in the early morning, afternoon and evening, with and without provocative measures. These may be done by having the patient drink one or more strong cups of coffee or other prompt stimulant, or by the use in the eyes of a weak solution of a mild mydriatic followed in a half to one hour by taking the tension of the globes. A rise in tension of 3 to 5 or more millimeters under such measures clinches the diagnosis and anti-glaucoma treatment should be instituted. One of the miotics must be instilled immediately after the test with a mydriatic has been made, that an acute glaucomatous attack may not be precipitated. A careful analysis of the mediate of the fundi and of the fields of vision are manda tory and to be frequently repeated as further diagnostic aids as well as a guide to treatment. Treatment should be prompt and carefully applied locally to the eyes and systemically to fulfil the special requirements of each particular case.. By such measures constantly applied and conscientiously carried out by the physician and the patient the condition may be controlled, or at least held within the bounds of safety. If, despite these measures, the fields of vision begin to progressively narrow or otherwise alter, and depression of the optic cups and changes in the nerve heads become evident, surgery must be considered. In this instance neither iridectomy nor trephining nor any of the other filtering operations are satisfactoryy, save cyclodialysis which offers the best hope of arresting the disease.

Glaucoma, without increased intraocular tension or with a very low tension carries a poorer prognosis and is less amenable to treatment than the common glaucoma simplex with moderate or high tension. The reason assigned for this is that the eye suffering from this condition has a threshold which will not tolerate the tension of the normal eye, and therefore a tension within normal limits is exceedingly high for such an eye.

The report of a recent case is here appended. A white matron, aged 30, no pregnancies, clerical worker, presented herself for eye examination on Nov. 13th 1941, because of a more-or-less constant, dull pain in the brow and temples, moderate acute attacks of occipital headache, tiring, and burning of the eyes. These symptoms were not definitely ascribed to routine use of the eyes but were augmented by her dutieas. These symptoms had persisted for several years—number not clearly known. Glasses had been worn for 10 years but during the past three years without relief.

Family and past history irrelevant except she had always been frail and severely constipated.

Externally the globes, adnexae, and their extrinsic musculature showed nothing abnormal except for a small cyst in the lower left tarsal plate.

The anterior chambers were moderately shallow, the pupils dilated and sluggish and tension by palpation appeared normal. Vision right eye was 20/20 and Jaeger 1, left eye 20/25 and Jaeger 1 in part. Without a mydriatic and testing via retinoscope and manifest refraction no refractive error was detectable and the +0.50 spheres she was wearing gave no aid to vision.

Ophthalmological examination showed moderate cupping of both discs the left decidedly the greater in comparison. Field of vision right eye constricted to 12° all around, the left to just sparing fixation all around. Tension by Schiotz was right eye 25, left 27 millimeters. Under ½ of 1% pilocarpine t. i. d. and appropriate diet, elimination and more rest than previously, on Nov. 26th she reported her subjective symptoms considerably relieved, pupils were within normal limits, tension by tonometer 22 millimeters each eye, field of vision righ teye out to 20° laterally and below and 35° above, left to 22° all around, vision and cups as before.

On Dec. 9th and 22nd, 1941, and Jan. 13th, 1942, a careful review showed enlargement of the visual fields, deepening of the anterior chambers and relief of subjective symptoms, no appreciable change in the cups. Glasses were discarded as advised at her initial visit.. Central visual efficiency unchanged.

CONCLUSION

It is certain that the prognosis in this case can not be predicted, constant treatment and a monthly or bimonthly review are necessary. Should medical treatment fail to control the progress of the disease

surgery is indicated. It is evident that a number of such cases are not diagnosed because of the paucity of gross symptoms, the lack of careful analysis and the presence of good, to normal, vision. It is obvious that this type of case can not be diagnosed without a careful examination of the media, the fundi and the fields of vision. Finally, using a mydriatic in this type of case for the purpose of refraction, the problem undiagnosed, might well result in a bilateral acute attack of glaucoma with disastrous results.

PROCTOLOGY

Russell von L. Buxton, M.D., *Editor*, Newport News, Va.

DIFFERENTIAL DIAGNOSIS IN DISEASE OF ANUS AND RECTUM

In the diagnosis of anorectal lesions, it is necessary that painstaking examination and study of the patient be made after such a history is taken as to insure a thorough coverage of *all* of the patient's complaints rather than just the chief complaint. Regardless of the patient's story, however, in diseases of the lower end of the intestinal canal, unless the examination is careful, the diagnosis may be faulty or incomplete.

One of two symptoms—rectal bleeding or pain—ordinarily brings the proctological patient to the physician. It is important to ascertain the duration of pain or bleeding, and the time of day at which either may appear. Then comes determination of the presence or absence of: discharge of pus or blood from the rectum; protrusion of tissue from the anal canal; swelling about the anus; itching, burning or tenesmus, and constipation or diarrhea. In cancer of the large intestine the most constant symptom is change in the bowel habit.

The history and examination usually make a definite diagnosis. Most commonly external hemorrhoids are encountered, or prolapsed internal hemorrhoids. Anal fissure is a frequent disease, and it may be overlooked because severe pain may preclude an adequate examination. A sentinel pile and pain on pressure in the anterior or posterior commissure denote the presence of a fissure even though it be invisible. Hypertrophied anal papillae and infection of the anal crypts should not be overlooked. Prolapse of the rectal mucosa is easily recognized and may be very troublesome to overcome. A hyperspastic sphincter is often discovered by rectal examination. A perianal abscess, or a draining sinus, ordinarily results from an underlying fistula-in-ano, with its break in the rectal wall which makes it self-perpetuating until complete removal. Sometimes it is necessary to differentiate a fistula-in-ano from an infected pilonidal sinus.

Less common disease conditions in this area are ulcerations, gonorrhea, papillomata, carcinoma, tuberculosis, chancre, condyloma latum, lymphopathia venereum and acquired or congenital anal stenosis. All of these diseases must be borne in mind. If there is any difficulty in the diagnosis appropriate laboratory studies are to be made.

After inspection of the anus a digital examination will reveal obstruction or abnormalities just within the anus and for four inches into the rectum. Obstruction may be congenital, or due to lymphopathia venerum or to inflammatory or cancerous changes. Rectal polypi or papillomata may be encountered. The use of the anoscope will reveal any internal hemorrhoids, fissures and polypi. Neither the finger nor anoscope nor any other instrument should be forced through a rectal obstruction.

The proctoscope should be used only after special training in its use. With it, lesions in the lower ten inches may be examined, biopsies may be made, cultures may be taken and a few minor operative procedures may be carried out. Rectal malignancies, amebic dysentery, rectal polypi, tuberculosis of the rectum are among the more common conditions easily diagnosed by use of the proctoscope.

Röntgen-ray examination of the large bowel, using the barium enema, is of inestimable value in the early detection of lesions lying between the sigmoid and the cecum. A barium enema should be used in any case of rectal bleeding when the cause is not discovered by the procedures outlined. However—a word of warning—do not depend entirely upon the barium enema for diagnosis of tumors of the rectum, for a rectal lesion which may be discovered by the palpating finger or the proctoscope may escape the eye of the röntgenologist.

Emphasis is laid upon a systematic examination of the regions involved, with due regard to the patient's chief complaint and history. If the conditions which may be encountered are borne in mind and if all available and necessary methods of study are used, it is not often that a diagnostic failure will result.

ANORECTAL SURGERY

i General Considerations
ii Examination and Diagnosis
iii Anatomy
iv Anal Fissure
v Anorectal Abscesses and Fistulae
vi Pruritus Ani
vii Hemorrhoids
viii Lymphopathia Venereum
ix Benign Tumors
x Malignan Tumors of Colon
xi Wounds of Rectum
xii Summary

In the issue for December of the Official Journal of one of our largest State Medical Societies the original articles were contributed by, so far as may be told by names, doctors descended from persons of, nationality or race, as follows: Irish, 1; Scottish, 1; English, 2; German, 3; Jewish, 2; Dutch, 1; Armenian, 1; and Polish, 1.

The ordinary surgical mask is grossly inadequate. Abstinence from talking is the best measure for keeping from infecting others with the secretions from your nose or throat.—Hirschfield & Lake, in *Surgery*.

INSURANCE MEDICINE

THE DETERMINATION OF ALBUMIN AND SUGAR IN URINE

N. R. Blatherwick, Ph.D.
From the Biochemical Laboratory, Metropolitan Life Insurance Company, New York

The accurate determination of urinary constituents presupposes that the specimen is either freshly voided or that a suitable preservative for urine is used. The specimen should be clarified by filtering or by centrifuging it, especially before the albumin is determined.

Methods for Albumin

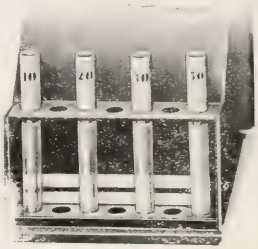
The most commonly used tests for albumin probably are the nitric acid ring test and the heat and acetic acid test. These procedures give results in the hands of trained workers that may be considered semi-quantitative in nature. The readings are recorded in such terms as "faintest possible trace," "faint trace," etc., or "1 plus," "2 plus," etc. While the results obtained in one laboratory by different persons may be strictly comparable, those of another laboratory, while comparable therein, may not agree with the interpretations of the first. The test described below has the great advantage of giving quantitative readings which can be universally accepted. This determination and that of sugar subsequently described are widely used in the laboratories of the life insurance companies.

The Kingsbury-Clark Method for Albumin.—This method developed in the Biochemical Laboratory of the Metropolitan Life Insurance Company, is based on the precipitation of albumin and other proteins by sulfosalicylic acid. The test is easily performed as follows: Pipette 2.5 c.c. of clarified urine into a test tube graduated at 10 c.c. and then add 3 per cent sulfosalicylic acid solution (30 grams dissolved and diluted to 1 liter with distilled water) to the 10-c.c. mark. Invert the tube to mix, allow to stand 10 minutes, and then compare the turbididty with the permanent turbidity standards. Record the value of the standard most closely matched as the albumin content of the urine. Seven standards equivalent to 10, 20, 30, 40, 50, 75 and 100 milligrams of albumin per 100 c.c. of urine are used. In case the specimen contains more than 100 mg. albumin, it may be quantitatively diluted and redetermined. Multiplying the value obtained by the number of times the specimen has been diluted gives the desired result. The method is described in detail in the original paper by Kingsbury, Clark, Williams and Post.[1] The matching of the unknown with the standards may be made either by daylight or by using the Clark lamp. The lamp is essential when the laboratory is dark or when natural illumination is variable. The tubes containing the standards and those in which the tests are made must have the same internal diameter, wall thickness and color. This albumin outfit is shown in



Figure I. A value of 50 mg. of albumin per 100 c.c. of urine obtained by this method is about equivalent to what is usually designated as a trace when Heller's or the heat and acetic acid test are used.

A simpler outfit designed for the physician's use is illustrated in Figure II.

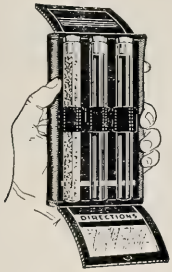


Many times it is not necessary to know how much albumin is present but only whether there is more or less than a given quantity. In such cases, one may use a portable outfit containing one standard equivalent to 50 mg. of albumin per 100 c.c. This kit has been used by our Visiting Nurse Ser-

vice for the past 10 years. It is shown in Figure III.



The sulfosalicylic acid used in this test can also be obtained in the form of dry pellets. These are added directly to the specimen and one can tell whether there is more or less albumin present than is indicated by the standard tube. This vest-pocket outfit is illustrated in Figure IV.



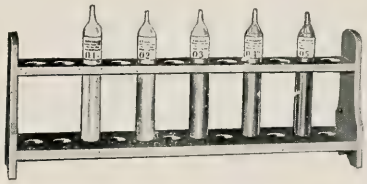
The standards are referred to as being permanent but this is not literally true. After about nine months they tend to become lighter, especially in the lower range, and thus give results which are too high. The entire set of standards should be renewed every nine months.

Methods for Sugar

Most of the qualitative tests for sugar are based on the use of alkaline solutions of copper or bismuth salts. The most popular of the copper solutions is that of Benedict. The results obtained by using these are only qualitative. The picrate method which is described below has the advantage of giving qualitative and quantitative results at one operation.

The Benedict Picrate Method for Sugar.—Alkaline picrate solutions containing sugar when boiled produce a brownish-red color similar to that given by creatinine. This color is compared with permanent standards representing definite quantities of glucose. The color due to creatinine is dispelled by the addition of acetone. The standards are made by mixing acid solutions of ferric chloride and cobalt chloride. The method is described in detail in *Practical Physiological Chemistry* by Hawk and Bergeim.[2]

The procedure follows: Transfer 1 c.c. of urine to a test tube graduated at 25 c.c. Add 3 c.c. of picric acid solution (2 grams of pure, dry picric acid per liter) and 0.5 c.c. of 5 per cent NaOH solution. Then add 5 drops of 50 per cent acetone (prepared fresh each day by diluting acetone with an equal volume of distilled water) and place the tube promptly in a boiling water-bath. At the end of 12 minutes remove the tube, cool it and dilute the contents to 25 c.c. Compare this colored solution with the permanent standards in tubes of the same internal diameter, recording the value of the standard most closely matched as that of the sugar content of the specimen. Five standards representing 0.1, 0.2, 0.3, 0.4 and 0.5 per cent glucose are used. If the urine contains more than 0.5 per cent sugar, it is diluted and the whole test is repeated. The value of the standard most closely matched multiplied by the number of times the urine has been diluted gives the desired value. The sugar rack and standards are illustrated in Figure V.



It must be remembered that when the picrate method is used some color is always produced chiefly due to the so-called normal urine sugar. Values up to 0.3 per cent are considered normal if the specific gravity of the urine is 1.025 or higher, and providing there is no history of diabetes mellitus.

Experience With the Methods

Our Home Office employees are given a physical examination, including urinalysis, prior to employment and yearly thereafter. This group, now numbering about 15,000, may be considered to represent an average cross section of the general population. The results obtained during a period of 16 years indicate what may be expected when these methods are used.

Ninety-one and six-tenths per cent of the urines gave negative values for albumin; 3.3 per cent contained 10 mg., and 1.7 per cent had 20 mg. per 100 c.c.; 96.6 per cent of all specimens contained

20 mg., or less, per 100 c.c. of urine; 59.7 per cent of all specimens showed less than 0.1 per cent of sugar, 16.0 per cent contained 0.1 per cent, 14.4 per cent had 0.2 minus per cent, and 4.8 per cent indicated 0.2 per cent sugar; 94.9 per cent of all the urines examined contained 0.2 per cent or less sugar.

SUMMARY

The Kingsbury-Clark method for the determination of albumin and the Benedict picrate method for the estimation of sugar in urine are briefly described. Representative values for albumin and sugar obtained from a large group of persons are recorded.

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2. HAWK and BERGEIM: *Practical Physiological Chemistry*, Philadelphia, 1937, 741, Eleventh Edition.

*Standards, tubes and other supplies may be obtained from R. P. Cargille, 118 Liberty Street, New York, The Fales Chemical Company, Cornwall Landing, N. Y., and Standard Reagents Company, Philadelphia.

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

UNPARDONABLE PROCRASTINATION

THE FOUR STATE HOSPITALS and the two institutions for the feeble-minded and the epileptics in Virginia are controlled by a Board of Directors of seven members, appointed by the Governor. The appointment is for four years. The members of the Board can be suspended or removed by the Governor, without cause. It is scarcely probable that the Governor would act without cause. The inept language probably means that the Governor could not be questioned about either the suspension or the removal of a member of the Board.

Governor James H. Price retired from the Governorship of Virginia on January 21st. On January 15th, six days before the expiration of his four-year term, he made six appointments to the State Hospital Board. Five of the seven members were reappointed. One of the seven was not reappointed. One new member was added to the Board. The term of office of one member does not expire until June 30th, next. On the date of the appointments, January 15th, the term of office of every single member of the Board, except one, had long ago expired. The terms of two members had expired on June 30th, 1939; terms of two others had expired on the same date in 1940; two others on June 30th, 1941. For more than six months the affairs of those six important institutions had been managed by a Board of Directors of seven members, six of whose terms of office had expired. If a hold-over member of the Board can carry on as well after his term has expired, why is it necessary for the Governor to take the trouble to make appointments and reappointments? If a member can function for a month after the close of the term for which he was designated, why can he not carry on for six, twelve, twenty-four, or for any other number of months?

Is the inattention of Governor Price to those highly important appointments indicative of his interest in the great public health problem represented by mental sickness? Is his lack of interest in the State Hospital Board a manifestation of his equal unconcern about the welfare of twelve or fifteen thousand patients in the six institutions over which the Board exercises control?

The law which created the Board and which makes it possible for the Governor of the state to suspend or to remove the members of the Board, without being obliged to give the reason for the suspension or the removal, is a disgrace to the people of the state. The members of the Board do not work for the Governor. Their duties are to the citizens of the state, and more specifically to the mentally sick folks of the state. The members of the Board should have a higher function to perform than to make obeisance to the Governor in order that they may not be disgraced by gubernatorial suspension or dismissal. The members of the Board should be made as secure against the Governor's displeaasure as the members of the judiciary are. If the Board member's conduct is reprehensible, he should be impeached and tried. The truth is that no citizen should accept appointment to office from which he could be removed by the Governor, without the Governor's specifying the reasons for the dismissal. Promptness, candor and courage are a part of the democratic process.

THE INDWELLING CATHETER problem has been greatly simplified since the introduction of the Foley bag. No longer need the patient's skin be mutilated with adhesive tape. The Foley catheter is made of latex rubber, and attached near the proximal end is a small rubber bulb, which is filled with from 10 to 15 c.c. of water through a separate outlet at the distal end. The bulb is filled after introducing the catheter into the bladder, and the outlet clamped or fastened securely with a rubber band. The size of the bulb keeps the catheter from slipping out ofthe urethra. This convenient method of draining has been universally adopted by urologists inthe past 4 or 5 years.—B. C. Corbus, Jr., in *Clinical Med.*, Jan.

SURGERY

INTRATHORACIC TUMORS

For this issue

F. P. Coleman, M.D., Columbia, S. C.

Tumors of this region frequently masquerade as suppurative disease of the lung, atypical pneumonia, deranged cardiovascular disease, renal pain, and various neuralgias and neuritic disorders. Occasionally, the neurosurgeon makes a correct diagnosis by finding during a craniotomy a metastatic bronchogenic cancer. Such manifestations of so serious a lesion indicate that more complete histories and physical examinations are needed. Patients showing atypical unresolved pneumonia, asthmatic attacks late in life, and lung abscesses past the age of 40 years, must be suspected of having a tumor of the lung. A bronchoscopy is indicated. A tumor of the chest may not present symptoms in its early stage of development. The clinicians more frequent use of the fluoroscope, mass x-rays in tuberculosis case-finding, and a greater working knowledge of intrathoracic disease, all contribute to an ever increasing number of so-called asymptomatic intrathoracic neoplasms for management.

The majority of these tumors are malignant, of intrapulmonary tumors the percentage of malignancy increases. Irrespective of its malignancy or benignancy removal of an intrathoracic growth is indicated. In benign lesions the only problem confronting the surgeon is the operative risk. A benign tumor is potentially malignant. Pressure on neighboring structures with growth of a benign tumor results in suppurative and crippling disease of the lung. Such later manifestations of a benign tumor must be weighed carefully in considering the operative risk. In malignant tumors the primary consideration is the extent of the disease, but unfortunately an operable case will occasionally present itself where the operative risk is so hazardous that sufficient courage cannot be mustered to proceed with total removal of the lung.

It is not always possible to distinguish a benign from a malignant lesion preoperatively. Extrapulmonary intrathoracic tumors with sharp and discrete borders are usually benign, while ill-defined and irregular intrapulmonary tumors are usually malignant; however, the operative disclosure may be the opposite. Benign tumors are usually slow-growing while rapid growth is characteristic of a malignant tumor. On the other hand, a malignant tumor may remain small and circumscribed while extensive metastasis takes place. It is possible for a benign tumor to manifest several or all the common symptoms of a malignant tumor, and a malignant one may to all appearances be benign.

Bronchoscopy, pneumothorax, thoracoscopy, sputum examinations for tumor cells, bronchography, and punch-biopsy are available aids to diagnosis. X-ray therapy is indicated in a case of mediastinal tumor as it may be lymphoblastoma; it has no useful purpose otherwise in a possible operable intrathroacic tumor.

If an intrathoracic tumor appears to be benign, or if it appears to be malignat but still confined within the region of successful removal, operative intervention is indicated. Exploratory thoracotomy is a harmless procedure and better tolerated than exploratory laparotomy.

UROLOGY

CARCINOMA OF THE PROSTATE GLAND

An excellent review of our knowledge of this important subject[1], is abstracted for our information.

Cancer of the prostate was seldom recognized prior to the turn of the century. Much interest has arisen in the subject during the past three decades, and discussion concerning the possibility of its removal by radical surgical procedures. Kahler states that by 1937 more than 3,100 cases of cancer of the prostate had been reported. Moore found 21 per cent of carcinomas of the prostate in a series of 229 men more than fifty years of age. His very exhaustive study involved making serial sections of the prostate which enabled him to find lesions which could not be recognized on gross exaamination at necropsy. In fact, in only 10 of the 52 cases of carcinoma did he suspect it. The condition is rarely found in men less than 40 years of age; it is more than likely to appear when the individual is of 60 to 69 years.

Clinical Diagnosis

Unfortunately, carcinoma of the prostate, like carcinoma of many other hidden organs, seldom causes symptoms until it has grown to a considerable size. There are no pathognomonic symptoms. Urinary obstruction may occur early if the growth is near the vesical neck, or it may never occur if the lesion is in the posterior capsule or lobe. The first indications may be sciatica, rheumatism and loss of weight.

One cannot go through the motions of rectal examination, conclude it in a few seconds, and make an accurate diagnosis in obscure cases. Experienced urologists agree that the most reliable meth-

1. Thompson, G. J., and Emmett, J. L.: Carcinoma of the Prostate, Surg. Clin. North America 21:1181 (Aug.) 1941.

od short of microscopic examination of the tissue is the carefully executed rectal examination. It is rarely necessary to employ needle biopsy in order to arrive at diagnosis. This method, if it fails to procure malignant cells, is of little if any value. Prostatic calculi and tuberculous disease both may cause extremely hard masses which are difficult to distinguish from a malignant lesion by palpation. Röntgenograms and urinalyses help in making a differential diagnosis. In rare cases, the gland feels exactly like a benign gland, but the tissue on microscopic examination will prove highly malignant. Generally there is röntgenographic evidence of metastasis when the patient is first examined.

Metastasis

All who have made postmortem studies of cancer of the prostate submit evidence that even in cases in which the primary lesion is very small, metastasis and invasion of other structures are likely to occur early. Complete surgical extirpation is rarely possible.

Conservative Surgical Treatment

During the past ten years at the Clinic we have not employed radical perineal prostatectomy in any case of prostatic carcinoma. When the growth has enlarged sufficiently to cause urinary obstruction, the disease has spread through the perineural lymphatics and cannot be completely eradicated.

Adequate transurethral resection, removal of all the obstructing tissue, and the employment subsequently of deep röntgentherapy offer better prognosis than does any radical procedure. There is much less risk to life and better assurance of perfect control of the urine. It has been stated that transurethral resection is not acceptable as a means of relieving carcinoma of the prostate with complete obstruction, as it does nothing to effect a cure. The same can be said of any other surgical procedure according to the evidence submitted by Moore, Rich, Kahler and others who have studied this subject from a pathologist's viewpoint. When urinary obstruction is complete the cancer has progressed beyond all hope of cure in the broad meaning of this term. In many cases all of the symptoms can be relieved by transurethral resection. The patient can be restored to apparent health and can resume his occupation. With the aid of deep röntgentherapy, regrowth of the cancer can sometimes be postponed. It is essential to remove completely the tissue which has caused the urinary dysfunction. If this is done, there will be no ulceration, sloughing or foul urine. These complications result, not from the method per se, but from its poor execution.

Results of conservative treatment

In the majority of our cases urinary obstruction was completely relieved by the operation, and this relief lasted until death occurred as a result of metastasis, or from an extraneous cause such as heart disease, cerebral apoplexy, or senility. We are in the process of tracing by letters and reëxamination the 253 patients who were subjected to transurethral resection prior to January 1st, 1936. To date, 74 per cent survived at least one year; 46 per cent at least two years; 31 per cent three years; 17 per cent four years; 8.7 per cent five years or more. This substantiates the statement that the results of transurethral resection for carcinoma of the prostate compare very favorably with those following other methods of operation. The method also has the advantage of a low mortality rate, for in the 253 cases there were only 2 hospital deaths, a mortality of less than 1 per cent.

In our last 200 cases, there was malignancy in 18 per cent of the cases, and in all cases of carcinoma of the prostate gland, transurethral resection is the operation of choice.

XERODERMA PIGMENTOSUM

(E. Bosworth, Rome, in *Jl. Med. Assn. Ga.*, Dec.)

This is a rare familiar skin disease of great interest, since it is one of a group of disorders in which the underlying cause is an extreme photosensitivity to the ultraviolet part of the solar spectrum,

Heredity and consanguinity of parents are prominent features.

The initial changes are erythema, mottling, puffiness, pigmentation and slight scaling of the skin on exposure to the sun's rays, unusually in the first year of life. If exposure persists these changes are followed by more active scaling, large freckle-like spots, and flat wart-like growths. Photophobia and conjunctivitis also usually appear at this stage. Further actinic trauma leads to pearl-like areas of atrophy, telangiectases, deeper pigmentation with large freckled and brown spots, and bulky hyperkeratotic areas which eventually pass into carcinoma. Atrophic contractures of the nose, mouth anad eyelids, with ulceration and opacity of the cornea may occur. Death from local destruction, sepsis anad metastatic squamous carcinoma finally ensues.

THE GENERAL PRACTITIONER AND THE ELECTROCARDIOGRAM

(J. H. Rowland, New Brunswick, in *Jl. Med. S. c. of N. J.*, Oct.)

Often too much is read into the electrocardiogram. The cardiologist should not only make and interpret the electrocardiogram but take the history himself, and do his own physical examination. Then he can suggest in his report such further methods of diagnosis as are revealed by a thorough study, and assist the general practitioner in the diagnosis, prognosis and treatment. Negative findings in the electrocardiogram may be interpreted as indicating the absence of disease, whereas such interpretation may be incorrect.

It is true within certain limits, that the physician skilled in electrocardiography who has carefully studied the associated clinical manifestations of a disordered heart seldom needs to resort to the electrocardiogram in diagnosis. The electrocardiogram has an indespensable part in a thorough cardiac study.

CLINIC

Conducted By

FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.

A 28-YR.-OLD single automobile salesman consulted me on June 11th 1925. He complained of difficult in walking, and stated that he first suspected that he had the trouble that has affected so many members of his mother's family when he was 18 years old. He felt a little clumsy in walking at this time. He got into the army on limited service 4 months before the armistice. He says he can hunt birds 8 hours a day, though he falls all around and bangs up his shins because of his clumsy gait. His blood Wassermann was negative last summer. An uncle who presumably has the same trouble had a negative spinal fluid Wassermann in Charlotte. No nausea or vomiting. He is constipated and takes purgatives about twice a week—aloin, c.c. pills, etc. Very little sore throat since tonsillectomy though part of one tonsil remains and collects foul caseous plugs. No cough. He is pretty short of breath on exertion, but his feet do not swell. He has no headache, but notices some lumbar pain when he overworks. No urinary symptoms, and a recent urinalysis was neagative. He can see and feel fibrillary contractions in the muscles of his forearms and legs at times.

He had measles at the age of 2 yrs., whooping cough at 16, tonsillectomy at 15. He had vaccinia and typhoid vaccine in the army and rabies vaccine last winter.

His father died of typhoid fever. His mother has trouble in walking, evidently poor coordination, from his description. One brother has similar trouble. His mother noticed at the age of 20 that she was clumsy in walking, and her sisters and brothers had the same trouble, which has been slowly progressive. Her mother's father was confined to a chair for 7 years before he died at the age of 82 years.

Physical examination showed a man of rather wiry build. His head was negative except for the tonsil shreds noted above. His neck, chest and abdomen were negative. T. 98.8 P. 66 R. 16 B. P. 110-70.

Neurologic examination showed his sensation to be normal, including light an dheavy touch, pain, heat and cold. The abdominal reflexes are normal. At times a light touch on the sole of a foot produces an exaggerated kick. Station normal. Curiously, his gait seemed normal, when observed especially. The knee jerks were slightly increased. He showed a positive Babinski on the left side only, and clonus of the right ankle only. All his toes except the great toes were drawn up and in planter flexion like a "claw hand", as if all his toes were hammer toes. He showed a coarse tremor of his fingers, but no nystagmus. His cerebral nerves were normal and his spine was negative.

The diagnosis can scarcely be in doubt here. The story of his rabies vaccine might suggest some trouble resulting from that, were it not for the fact that his symptoms clearly antedated the vaccine and his family history is most important. This is a typical case of Marie's hereditary cerebellar ataxia. Even though his gait at this time looked objectively normal, the patient is well aware that it is abnormally clumsy, and we may feel sure that sooner or later an objective ataxia will become obvious. Unfortunately, no treatment could be suggested as giving any hope of relief.

ARTERIOSCLEROSIS

(T. Leary *Bul. N. Y. Acadm. of Med.*, Dec.)

Atherosclerosis, the important form of arteriosclerosis, is distinguished from other form by the presence of excess cholesterol in the lesions. It is the cholesterol disease of man.

Earliest lesions of atherosclerosis in the experimental rabbit and man are marked by the presence of foam cells containing cholesterol esters in the subendothelial layer of the normal arterial intima. This lesion regresses in atheroma by a mechanism of cholesterol removal. It progresses in atherosclerosis to produce the characteristic nodular lesions of the disease.

Excess cholesterol is the cause of atherosclerosis. Stress determines the location of lesions. Thyroid secretion controls cholesterol metabolism. Sex, age (time plus thyroid determination) and heredity are modifying factors.

Diet which limits or excludes cholesterol should prevent atherosclerosis. Vegetable oils, whose sterols are not absorbed, can be substituted for animal fats.

WHAT EVERY WOMAN DOESN'T KNOW— HOW TO GIVE COD LIVER OIL

NOT EVERY WOMAN KNOWS that psychology is more important than flavoring in getting children to take cod liver oil. Most babies will not only take the oil if properly given, but will enjoy it. Proof of this is seen in orphanages and pediatric hospitals where cod liver oil is administered as a food in a matter-of-fact manner, with the result that refusals are rare.

The mother who wrinkles her nose and "makes a face" as she measures out cod liver oil is almost certain to meet similar behavior on the part of her baby.

Most babies can be taught to take the pure oil if no unpleasant associations are attached to it. If the mother herself takes some of the oil, the child is further encouraged.

The dose of the oil may well be followed by orange juice, but at an early age, usually no vehicle is required. The oil should not be mixed with the milk or the cereal feeding unless allowance is made for the oil which clings to the bottle or the bwol.

On account of its higher potency in Vitamins A and D, Mead's Cod Liver Oil Fortified With Percomorph Liver Oil may be given in one-third the ordinary cod liver oil dosage, and is particularly indicated in cases of fat intolerance.

POTENTIAL SUICIDE
(From Page 64)

Symptoms that are commonly found in psychotics who have suicidal trends are: hypochondriacal ideas, fear of losing one's mind, self-accusatory ideas, irritability, agitation, sleeplessness, a worried, anxious, depressed mood, and tendency to self-mutilation. This last symptom may manifest itself in one of several ways: some patients ingest pins, nails, bits of glass etc.; some wilfully bang their heads against the wall; others stick pins into their flesh. There are also to be considered the so-called purposeful accidents, and attempts at castration. The presence of a depressed mood alone is sufficient reason to suspect a patient of suicidal potentialities; if this mood is found in combination with one or more of the trends just referred to, the probability of suicide is even more real.

Four short case history are given to emphasize in a particular way one or more of these suicidal trends in psychotic individuals.

Case I.—White man, aged 22, birth and early development normal. First mental changes noticed at age of 19, when he became noticeably moody, sullen and seclusive. Shortly afterward he attempted suicide by carbon monoxide—the familiar method of staying in a closed garage while he left the motor of his car running. Commitment to a state hospital followed recovery from his carbon monoxide exposure. Examination at this time revealed a withdrawn, sullen boy of nineteen. His suicidal attempt was apparently motivated by guilt feelings concerning masturbation. Questioning also brought out the fact that he had contemplated castration, as a logical sequent to his guilt feelings. Over a period of fifteen months he had what seemed to be a complete remission of his symptoms and was discharged from the hospital.. His second admission followed a suicidal attempt by shooting; the bullet lodged behind the right orbit. He showed obvious signs of schizophrenia and to date no tendency to remission has been noticed. The reason given for this second attempt was identical with the first.

Comment: This case is an example of the suicidal tendencies that are to be met with in young schizophenics. The specifically dangerous ideas in this case revolved around guilt feelings concerning his masturbatory activities. It further serves to illustrate the psychodynamic connection between suicide and castration. Another feature that seems characteristics of this kind of case is that both attempts were very serious in nature. His methods leave no doubt on this point.

Case II.—White man, aged 32, admitted following suicidal attempt in which he jumped off a roof and sustained a fractured skull and cerebral laceration. For six months prior to attempt he had been mildly depressed, sleepless and self-accusatory. He had seen his family physician because of many hypochondriacal complaints and was told that he had no physical disease. Two weeks before admission his mother died. He thought that "people will say I killed her." After the funeral he tried to jump in front of an auto; his leap from the roof of his home followed shortly after this. He was found to be subjectively and objectively depressed, agitated and hypochondriacal. In inquiring into the patient's history, it was found that he had a depression six years before that lasted for ten months and finally cleared completely.

Comment: The sleeplessness, agitated depression, hypochondriacal ideas, and the thought that "people will say I tried to kill her," coupled with the extremely important history of a depressed period several years before, should have immediately indicated the diagnosis. Subsequently the case could have been handled in such a way as to have prevented the attempt that was finally made. Diagnosis, subsequent proper care and observation of this type of psychosis—manic-depressive psychosis, depressed type—is particularly important because recovery from this mental condition is usual.

Case III.—White woman, aged 46, single, admitted to a city hospital with a twelve-cm. superficial laceration of the neck from a suicidal attempt with a razor. For about four years she had felt she was in danger of sexual assault by a mysterious foreigner who would occasionally drive by her on the street and yell, "I'll get you yet, you bastard." She had also felt that this man or someone in his gang had spied on her at the various boarding-houses in which she had lodged.. The night of hospitalization she had again been yelled at by this man, so in terror she had fled home, taken a safety razor blade out of her bag where she had been carrying it for months for protection, and cut her throat. As soon as the act was completed she grabbed a towel to stop the bleeding, and screamed for a doctor and a priest. At the city hospital her mental condition was noted and she was committed to a state hospital. Psychiatric diagnosis was involutional psychosis, paranoid type.

Comment: In this case one sees a woman who had delusions of persecution for four years, and who, in desperation, sought suicide as escape from this imagined persecution. She lived alone and spent a good deal of her time in various homes as a practical nurse, so that no one knew her well enough to suspect her mental condition. She never thought of going to a physician with a trouble of this kind, and unfortunately never reported her fears to the police.

In selecting these three cases the most typical psychotic reaction for each age group has been borne in mind. There is a tendency for the youngest psychotic suicides to present a schizophrenic picture, those of the late twenties and thirties to be manic-depressive, and those about the involutional period are well recognized as involutional melancholia. Naturally this division is not a strict one, but a classification does help in presenting the picture..

Finally, it is desired that special emphasis be placed on a group of cases that the authors choose to designate as *cryptopsychotic*. Nothing more is meant by this than to point out that certain cases of involutional melancholia appear, on cross-sectional examination, to be without psychosis, when in reality they merely gain this effect by skillful evasion of questions. These cases often require long periods of investigation and observation before it can be definitely determined whether or not a psychosis exists, for they are easily confused with psychoneuroses or the so-called hypochondrias, with the consequent inevitable tendency to minimize on the part of the physician. This minimizing is doubly dangerous in this type of case, for these patients are purposeful, determined, clear, and apt

to be ingenious in their attempt. The following cases will serve as an illustration of this type.

Case IV.—A 56-year-old city fireman, married, had one grown daughter, and a home life that was, at least on surface inspection, pleasant and congenial. His personality before his illness was described as steady, pleasant, conscientious and agreeable. His family relates that the change occurred in the patient six months before admission to the hospital.. He became slightly irritable, would worry unduly about his daughter when she was out late at night. He was seen by his personal physician for various "hypochondriacal" complaints and after examination was discharged from his care. His physical complaints were persistent and he expressed the fear of being retired from active service. The cause for his admission to a local general hospital was an overdose of luminal which had been prescribed for his nerves and sleeplessness by his physician. At that time he took about 15 grains of the drug. After a sleep lasting 18 hours, he was examined by a competent psychiatrist, was considered to be without psychosis, and discharged from the hospital. He remained at home for a week and then returned to work, apparently recovered. Without warning, two months after his discharge, he again took an overdose of phenobarbital. This time the total dose was just double that previously taken. He again recovered after a long sleep, and was committed to a state hospital for a period of observation. During this time he was neither objectively nor subjectively depressed, his sensorium was clear, he denied that he had made any suicidal attempt, and explained that although he had previously been sleepless and worried over financial difficulties and his job, his present experience had taught him a lesson. He now saw things in a more normal light, and had "learned what the really important things in life are." He was agreeable about the ward, helped with the work and became generally liked. One night, about four weeks after admission, he made an ingenious and carefully planned escape. He was found a few hours later in his summer camp, in coma, and again suffering from an overdose of phenobarbital. It was never known what the dose taken in this last attempt was, but it was obviously much greater than that taken previously, because despite intensive treatment, he rapidly failed and died a respiratory death.

Comment: The question may arise whether or not this patient was psychotic in the usual sense of the word. It is true that at all times on cross-sectional examination, it was impossible to point out definitely the existence of a psychosis.. When the case is viewed longitudinally, the psychosis becomes more evident. The age of onset gives color to the symptoms: persistent hypochondriasis, irritability, tendency to inappropriate worry—a great change from his previous personality—all seem to point to an involutional psychosis. The clue to the underlying and effectively concealed depression is the persistence in the suicidal attempts. Careful investigation never revealed any situation in this case that would explain any of the attempts, and the postulation that an underlying psychosis existed could not be avoided. Other cases of the same general type could have been selected, but this one illustrated clearly a crude but effective pharmacological experiment to which the patient subjected himself. To the medical man the ingestion of 15 grains of luminal is at best a gesture, but in this case it was just as serious an attempt as was the last and fatal dose. It seems likely in this regard that by the irony of ignorance the label *POISON* on the iodine bottle has saved many a life.

The management of the potential suicide naturally has to be individualized. If the patient is psychotic he should be immediately committed to an institution in order to protect him adequately from his tendency. At the Boston State Hospital a special building has been set apart for the care of the supposedly "acute recoverable" cases. A recent census of the population of this building revealed that out of the 70 patients, 50 (71%) were classified as being, or having been, suicidal. This observation should serve as a stimulus to insure the protection of this particular type of psychotic patient with suicidal tendencies, in that the prognosis of the group taken as a whole is very good.

Franks[5] after studying 352 consecutive cases of attempted suicide admitted to the Toronto Psychiatric Hospital suggests the following practical methods of preventing suicides:

(1) Raising the standard of educational achievement of the populace, (2) good mental, physical and public health measures, (3) teaching certain groups among the public and professions an appreciation of suicidal danger signals, (4) abolishing the stigma attachment to the act, (5) minimizing publicity, (6) protecting heights by simple, practical means, (7) encouraging the writers of medical books to devote more space to information on suicides, (8) elaborating the teaching with regard to suicide in medical, social and legal schools, (9) training youth to take responsibility, (10) encouraging any factors that will build up the solidarity of the group in which the individual finds himself, (11) inquiring into why there is a greater tendency for foreign- than native-born to commit suicide, (12) establishing a fixed regular daily routine for the unsettled person which will bring satisfaction and contentment to him, and (13) establishing clinics to which such distressed persons may come for help and guidance.

Franks found that, excluding patients with definite mental disease, the majority of patients were pleased that their attempt had been a failure and after a short course of psychotherapy developed a good attitude toward the future.

Conclusions

The general practitioner is usually the first to see a patient in whom depression and suicidal risk are evident or latent.

All depressions of any degree or persistence should be considered potentially suicidal, the responsible relative warned, and the patient kept under constant observation at home or, better, placed in a hospital for the mentally ill.

The apparent psychoneurotic with symptoms of depression and ideas or threats or gestures of suicide is always an unknown quantity regarding actual suicide potentialities; whenever possible such a case should be referred to the psychiatrist.

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MEDIASTINAL ABSCESS

(*From Page 68*)

The patient gradually improved and was discharged from the hospital on June 11th, with slight drainage from the mediastinal wound and directions to return to his family



Figure 1

physician for dressings. We saw him last on July 11th at which time the wound had completely healed and the patient's general condition was good. Heart and lungs were normal.

Comment

The mediastinal abscess in this case most likely resulted from a small perforation of the esophagus or trachea produced by the trauma of the chest wall. If differentiation between a pericardial and mediastinal disease process had been made earlier and drainage instituted before the patient had become so toxic, operative risk would have been much less. Exploration of the anterior mediastinum through the sternum is a fairly simple procedure;



Figure 2

and when there is sufficient evidence of a localized abscess in this area, one should not hesitate to look in.

An examination has been announced by the FEDERAL CIVIL SERVICE COMMISSION to secure ORTHOPEDIC MECHANICS for the Army services. The salary is $2,000 a year. Persons may qualify under the following optional subjects: (1) General (2) Bracemaker (3) Shoemaker and Leatherworker and (4) Limbmaker. Because of the demand for qualified eligibles, applications will be accepted at the Civil Service Commission's Washington office until further public notice.

Applicants will be rated on the extent and quality of their experience. They must have had 5 years of appropriate experience in orthopedic work within the past 10 years. Experience in general shoe repair will not qualify.

Examination announcements and and application forms may be obtained at first—and second-class post offices and from—

Civil Service Commission, Washington, D. C.

...*THE AMERICAN NEISSERIAN MEDICAL SOCIETY* announces an annual prize of one hundred dollars, to be known as the P. S. Pelouze Award, to be presented to the person under thirty-five years of age who, in the opinion of the Committee of Awards, has made the greatest contribution to the control of the gonococcal infections during the preceding year. Nominations for the award should be sent to the Secretary not later than March 31st of each year. The winner will be announced at the subsequent annual meting of the Society.

Oscar F. Cox, *M.D., Secretary*,
475 Commonwealth Ave., Boston.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

ON THE TREATMENT OF COMPOUND FRACTURES

Compound fractures present many problems that simple fractures do not, the danger of infection being one of the greatest. Not only the ordinary pyogenic organisms may be present in the wound, especially where it is contaminated with dirt or polluted with soil, but also we have the danger of tetanus and gas-bacillus organisms.

Where it is possible to clean the broken bones and do a careful debridement, removing all contaminating materials by irrigation, we can do much toward preventing infection. However, as everyone who has handled many fractures knows, in wounds of this kind we often do have infection develop and sometimes delayed union may result.

In the treatment of compound fractures we find that the use of sulfanilamide in the wound, after thorough cleansing and careful debridement has been done, is most helpful and will sometimes apparently prevent any infection at all or, if infection does develop, it proves readily controllable.

A number of men are using a combination of sulfanilamide and sulfathiazole in wounds, and this has worked very well, the assumption being that the two drugs will act against a greater variety of organisms than will sulfanilamide alone.

Our experience is that sulfanilamide in the wound and sulfathiazole given orally make a good combination, giving far better results than we have ever been able to obtain until these drugs were available.

In the prevention of tetanus and gas bacillus infection we have found that deep x-ray therapy is helpful. 8-r given daily for three days should do much toward preventing the growth and development of the perfringens organism.

In the prevention of tetanus we, naturally, rely principally upon tetanus antitoxin given as a prophylactic treatment. We find that the combined tetanus and perfringens antitoxins are best to use in compound fractures, especially where there has been soiling with polluted material. It is necessary though in these cases to see that the patient is not sensitive to serum. The patient should be desensitized before serum is given.

Ultraviolet light daily over the injured area is of help, especially where there has been considerable laceration of the soft tissues, and we find this helpful in certain types of injuries.

Another thing that should never be forgotten in the treatment of severe injuries, such as severe compound fractures and laceration of soft tissues, is repeated blood transfusions. Blood transfusions are sometimes a tremendous factor in the recovery of a patient. The transfusion supplies fresh blood that is so vitally necessary to the patient; it raises the resistance of the patient to infection; the patient feels better; the general condition improves and, doubtless, fresh blood adds certain antitoxins which are immediately available to the body in fighting infection. Also, blood is a food, and to the patient who has lost blood, who is weak and anemic and unable to take food, repeated transfusions often are life-saving.

As the local infection, if any, clears up, compound injuries may present problems of various kinds. There is often difficulty in keeping the fragments in proper position, healing may be slow, the patient's general condition may be such that no matter what treatment is given a good result may be difficult to obtain.

In cases where the fractures are slow to heal, we find the use of A. T.-10 helpful in keeping the blood calcium up to the proper level, especially when there is a tendency for the blood calcium to drop below normal. Certainly, in theory it keeps up a plentiful supply of calcification material for providing new bone and a strong union of fragments, where there is threat of soft callus being slow in forming a firm union.

In the aged and greatly debilitated the use of appropriate sex hormones is helpful, and we have found this, also, in some cases to be a powerful factor in keeping up the patient's general health and spirits, and it certainly has had a helpful influence in promoting healing of fractured bones and, in fact, the healing of the soft tissues, also.

Every individual patient must be studied carefully, and appropriate treatment given, but we feel that the use of these newer things in the treating of fractures have had a great influence in obtaining better and more rapid healing than would have been possible years ago.

There are many other things, of course, that must be considered in the treatment of fractures, especially compound fractures, but, in addition to the usual treatment, we find these things worthy of use in all cases in which they are indicated.

For Corns—Glacial acetic acid .....dr. 1
Salicylic acid .....dr. 1
Cannabis indica .....gr. 20
Flexible collodion to make.....oz. 1
Apply twice daily.

The best solvent for hardened feces is warm water.—Whittaker (1884).

SOUTHERN MEDICINE & SURGERY

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ALCOHOLISM: SOME "CAUSES" AND TREATMENT

Give me a bowl of wine;
In this I bury all unkindness.

O thou invisible spirit of wine;
If thou hast no other name to be known by,
Let us call thee devil!

Come, come, good wine is a good
familiar creature, if it be well used;
exclaim no more against it.

Give me a bowl of wine;
I have not that alacrity of spirit,
Nor cheer of mind, that I was wont to have.

—From Different of *Shakespeare's* Plays.

SHAKESPEARE was no uplifter. True, he lifted the English language to new heights, but that was as incidental as it was inevitable. Like his own Mark Antony, he spoke what he did know. And he knew the various effects of alcohol, as it was variously used by various persons under various circumstances.

In how close agreement, evidently, is the opinion of Doctor Merrill Moore[1] with that of Poet William Shakespeare, as to the good and evil inherent in alcohol!

Read what Dr. Moore has to say as to what alcoholism is and what can be done about it.

We know as little about alcoholism today as we did about diabetes 40 years ago. We are beginning to collect clinical facts to prove that alcoholism is a disease.

In simple drunkenness:

1. Take the liquor away from the patient or take the patient away from the liquor.
2. Get the alcohol out of his stomach and his tissues.
3. Give the patient fluids and food, as he can take them, to restore normal water balance, vitamins and minerals.
4. Use sedative or analgesic drugs, as bromides or aspirin, to relieve the nervous tension.
5. Protect the patient and take care of him so that he can not hurt others or himself.
6. Carry out certain special procedures in various emergencies.

Other conditions that require special handling:

1. The treatment of the hang-over.
2. Psychotherapy and the management of the alcoholic.
3. Care of the chronic alcoholic addict.
4. The treatment of patients with alcoholic psychoses, delirium tremens, Korsakoff's syndrome, etc.

The alcoholic is a man with real difficulties, trying to solve them by drinking. Before the alcoholic

1. Merrill Moore, Boston, in *Jl. Tenn. State Med. Assn.*, Jan.

begins drinking, he has certain personality traits. Asking parents and teachers what the patient was like at home or in school produces material often very revealing. Usually they say he was more sensitive and interesting. When he had difficulties, he could nearly always get out of them. He was usually lovable and he showed promise; pressed, they would admit that he was unstable, childish, often attached to his mother, reacted poorly to disappointment or deprivation, had tantrums, was overemotional, had tendency to blame others. Most of it is *not* the description you get of the person who got along without liquor, or with it..

Alcohol releases the brakes. When we get tight we really get loose. Alcohol stimulates only the tongue, the mucous membrane of the throat, and sex *desire*.

Deficiency diseases frequently result because the heavy drinker spends his appetite and his money on liquor and seldom eats adequately. Damage to the liver and kidneys is common.

Alcoholism runs in families, which may be the result of common environmental factors. There is no proof that alcoholism is hereditary or that it directly injures the stock of a family, or that it influences longevity to any great degree. There is some evidence that alcoholism improves a family stock by killing off or sterilizing the weak members.

Some persons have a nervous system that is relatively resistant to alcohol and others do not.

Some men get talkative when they drink, some get weepy, others get pugnacious, or aggressive, or morose, or manic, or erotic. There is some evidence that a little tolerance can be gained, and much can be lost, which may be related to liver function and to sugar metabolism. Allergy to alcohol?, judgment on that point should be deferred.

There are only two kinds of alcoholics: those who drink too much once in a while and those who drink too much all the time.

These causes are:

1. Allergy. Lack of recognition of the allergic condition, added to the impulse to drink as others do in social experience, leads to alcoholism.
2. Adolescent Insufficiency. Many young persons begin to drink because they lack in self-expression due largely to repressions and frustrations during adolescence or to lack of training.
3. Sexual Difficulties. Due to inadequate preparation for sex experience or to uncongenial domestic conditions.
4. Marital Disunity. The use of alcohol to escape from unhappy marital situations is very common.
5. Personality Disorders. Blow - off - steam drinking leads to further efforts toward repressive handling of difficult situations. Result is vicious circle that breaks down into physical or mental illness via alcohol.
6. Habitual Obsessions. Alcohol releases nervous tension. Anxiety grown as public disapproval increases, and as adverse judgments are expressed, the alcoholic drinks to avoid them.
7. Loss of Self-Confidence through increasing self-catechizing or the misdirection of energy toward no goal, or an unattainable goal is commonly an answer.
8. Nonevaluating Factors. Increasing inability to evaluate self, home, and economic factors.
9. Social and Economic Troubles. Gradual abandonment to degradation of social and economic status commonly leads the alcoholic to drink to excess.
10. Fatalism. The final stage of loss of self-will to overcome recognized disabilities, or obstacles, that might actually be overcome, with help from others.

In 100 cases I have found one or more of those conditions always to be present. Yet much more could be said. A special breed of iron women should be bred to mate with alcoholics, though some would say it would be an awful waste.

The roots of alcoholism are in childhood or adolescence, usually some of these factors:

1. Overdominance or pampering by one or both parents, or overdominance by one parent and overindulgence by the other.
2. A tendency to develop feminine ways and means, especially by boys who are in too close association with the mother.
3. Bed-wetting and masturbation, not to the usual extent to which these conditions exist, but to the stage of being a problem.
4. Craving for sweets or stolen food.
5. Employment of devious tricks to get their own way.
6. Failure to train the child to hold his own and feel equal in and to its own world. Parents should see to it that children are always up to their herd or one step ahead of it, and give them instruction so they will be.
7. Suicidal drives are the basic disturbances in many alcoholics.
8. Wish to attract attention and annoy or disgrace the family and be fussed over and put to bed by an anxious or cross mother.
9. The development of an escapist attitude all

along. The wish of the alcoholic to follow the line of least resistance and obtain immediate pleasure.

Failures are common for all types of treatment, in and out-of institutions. Sometimes a patient who has not always been an alcoholic is helped by the removal of a nagging relative in the house, or a business worry.

The sedative and analgesic drugs are especially useful in the treatment of the hang-over. Benzedrine sulphate (or amphetamine) is especially useful as an adjunct to psychotherapy in treating chronic alcoholics who tend to drink only when they become depressed or nervous. Psychotherapy in or outside an institution (combined with the use of drugs), offers the best prognosis to the alcoholic who wishes to get well.

The first step in the treatment of chronic alcoholism should be hospitalization to determine the patient's physical condition, or institutionalization.

There are alcoholics who do not want to get well, who do not wish to live, who actively wish to die, but do nothing about it but drink.

All psychotherapy is slow and takes a lot of time at each interview and requires many interviews; psychotherapy of the alcoholic is even slower. Some feel that it is not worth while.

Assume that he is a man with problems who uses liquor as his solution to, or escape from, them. Treatment thus logically becomes the process of a) finding out what his problems are and doing what can be done about them, other than drinking, trying other solutions which sometimes work and are better than drinking, and b) trying to train the alcoholic not to drink, but to learn other ways of getting what alcohol has given him. Sports, hobbies, work, all forms of play and recreation—these are promising. Some alcoholics learn to say, "Make mine ginger ale" or "I'll take coca-cola." An alcoholic who will not or can not coöperate in a treatment program, what can you do for him?

1. Try to see that he eats adequately to buffer the alcohol he drinks with food, including vitamins and minerals.
2. Keep him busy and entertained. Many drink only when bored or unoccupied. Wives and friends could do more to keep such patients interested and busy, though often it is a thankless task. Try everything that is wholesome and go with him and participate with him.
3. Help him learn to be less passive, defeated and destructive in his thinking. Do not nag him or blame him. Remember he is a sick man, emotionally sick, or with an immature personality, and may be doing the best he can.

A recent publication not now at hand carries an instructive article[1] which is one of that class, one of them brought to light every once in a while, which shows how far ahead of the general thought of his time could an exceptional man be.

Dr. Thomas Trotter was not the first to call addiction to alcohol a disease, as a few years before him Benjamin Rush had so pronounced it. Trotter probably was the first to deal with the problem in a truly medical sense.

Thomas Trotter (1760-1832) studied medicine in Edinburgh and in 1778, at the age of 18, became a physician in the British Navy. He later returned to the University of Edinburgh where he worked for his medical degree which he received in 1788. His ambition was to submit a doctor's thesis on a subject "that had never been noticed by any former graduate." After much consideration he decided on the subject of "ebriety." The subject was found acceptable by the faculty and in 1788 Trotter submitted his thesis, *De Ebrietate,* ejusque Effectibus in Corpus humanum.* For this work he received the thanks of the Royal Humane Society. Dr. Hawes in transmitting the thanks of this institute observed that "the investigation of so important an inquiry, in a regular scientific manner, was never before thought of: it was a subject left, happily left, to be ingeniously executed and amplified by Dr. Trotter."

In 1804, Trotter greatly amplified and revised his inaugural dissertation and published it as a book of 200 pages. He considered drunkenness to be a disease; produced by a remote cause, and giving birth to actions and movements in the living body, that disorder the functions of health. Wisely he remarked: Mankind have reluctantly admitted into the catalogue of their diseases, those evils which were the immediate offspring of their luxuries; hence, we find drunkenness only cursorily mentioned among the powers that injure health, while the mode of action is entirely neglected and left unexplained . . . . . The priesthood hath poured forth its anathemas from the pulpit; and the moralist hath declaimed against it as a vice degrading to our nature. Both have meant well; and becomingly opposed religious and moral arguments to the sinful indulgence of animal appetite.

Drunkenness is a temporary madness. But in constitutions where there is a predisposition to insanity and ideotism, these diseases are apt to succeed the paroxysm, and will often last weeks and months after it. Wounds and contusions of the brain and cranium, with other organic lesions, have a simlar effect.

1. Essay, Medical, Philosophical and Chemical, on Drunkenness.

*It is worthy of note as an oddity of language that *ebriety* and *sobriety* are not opposites, but synonyms.—*J. M. N.*

Does not the ebriate return to his potation rather to raise his spirits, and exhiliarate the mind, than to support and strengthen the body? The diseases of body, if unattended with dejection, have no need of vinous stimulus.

In the present stage of society, human kind are almost taken out of the hands of Nature: and *fashion* now rules everything. It too often happens that the infant is deprived of the breast long before the growth of the body has fitted the stomach for the reception of more stimulant food. Instead, therefore, of its mother's milk, the infant is fed on hot broth, spiced pudding, and, perhaps, also, that enervating beverage tea. The taste is thus early vitiated, the stomach and bowels frequently disordered; and, to add to the mischief, the helpless child is forced to gulp down many a nauseous draught of medicine or bitter potion, that its unnatural mother may acquit her conscience of having done everything in her power to recover its health. Dyspeptic affections are in this manner quickly induced: a constant recourse to medicine, wine, cordials, and spirits, must be the consequence: and the child of the fashionable lady becomes a certain *annuity* to physic; a drunkard at twenty, and an old man at thirty years of age.

Previous to Trotter, Benjamin Rush had presented some ideas on the therapy of addiction, such as religious conversion and even conditioning.

The habit of drunkenness is a disease of the mind. The soul itself has received impressions that are incompatible with its reasoning powers. The cravings of appetite for the poisonous draught are to the intemperate drinker as much the inclinations of nature, for the time, as a draught of cold water to a traveller panting with thirst in a desert. The injudicious and ill-timed chastisement of officious friends have driven many unfortunate to ruin, that might have been reclaimed by a different treatment. Suicide has sometimes been first resolved upon after these admonitions.

This disease, the habit of drunkenness, is like some other mental derangements: there is an ascendancy to be gained over the person committed to our care, which, when accomplished, brings him entirely under our control. To hold up a mirror as it were, that he may see the deformity of his conduct, sometimes makes a strong impresion on the mind; but at the conclusion of every visit, something consolatory must be left for amusement, and as food for his reflections.

The patient already knows as well as the priest and moralist that the indulgence is pernicious; but it is not so easy to convince him that you possess a charm that can recompense his feelings for the want of a grateful stimulus, or bestow on his nervous system sensations equally soothing and agreeable as he has been accustomed to receive from the bewitching spirit.

In order to strengthen the body if debilitated, remedies are to be resorted to; such as the cold bath, chalybeate waters, exercise in the open air, condiments, vigorous diet and gentle laxatives; but all the harsher purgatives must be avoided: if the diet can be so conducted as to supersede the use of medicine in regulating this discharge, so much the better. Cautiously avoid every preparation that has ardent spirit in its composition.

There is no safety in trusting the habitual ebriate with any limited portion of liquor. Whenever I have known the drunkard effectually reformed, he has at once abandoned his potation.

I am of opinion, that no man in health can need wine till he arrives at forty. He may then begin with two glasses in the day: at fifty he may add two more; and at sixty he may go to the length of six glasses per diem, but not to exceed that quantity even though he should live to an hundred. Lewis Cornaro, the Venetian nobleman who lived upwards of a hundred, used fourteen ounces of wine in the day. The stimulus of wine is favourable to advanced age.

Knight asserts on the basis of a study of 30 men at the Menninger Clinic that in all cases of chronic alcoholism there is a serious underlying personality disorder, and that most of our alcoholics have been divorced at least once, illustrating their characteristic maladjustment with women.

Wall, after a study of 50 women admitted to Bloomingdale, believes that alcoholic psychosis is closely associated with life situations in which the social standing is threatened by a disclosure of unconventional behavior.

Drunkenness was a capital offense, except for men and women over 70, under the Aztec code. Alcohol was brought to these people by the Spaniards. Now, "intoxicating drinks form the bulk of the expense for baptisms, marriages, house warmings, funerals, and saints' days."

Attempt is made to answer the age-old, unanswered question as to what is *normal*: a statistical concept, a function of the specific cultural group, with a filling of fine moral judgments.

It is stated that, in the Commonwealth of Pennsylvania, within the past two years two men were arrested on charges of disorderly conduct, their violations of the law being the eating of cat meat. This type of conduct was represented as not only illegal, but also immoral and abnormal. Medieval punishments were certainly not inhuman to the average person of that period, nor to the dominant and politically influential group who, by position, defined inhuman punishment.

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2. J. P. Shalloo, Ph.D., Philadelphia, in *Quarterly Journal of Studies on Alcohol*, Dec.

It is clear that, as to the criminality or immorality of the use, or even the abuse of alcohol, and as to most if not all the *mala prohibita,* and even a good many acts called *mala in se,* there is little of the essential to be found. Certain practices are wrong or not according to capricious local sentiment. As Hancock, the Superb, said of the Tariff—"It is a local issue."

HOW'S THAT ABOUT CANCER?

STARTLING is the story of stomach cancer as told by one[1] who has had ample experience of it. And not at all orthodox are his conclusions. Cancer "control"—a poor word, for we try to control children, dogs, electricity, automobiles and all other *useful* things—according to the enthusiasts, is only a matter of education to early diagnosis and treatment. This article says not, that we are not getting toward our goal, and intimates that we are on the wrong road.

Carcinoma of the stomach should be emphasized as to its frequency in relation to carcinoma of other organs and as a cause of death as related to other diseases. Carcinoma is second only to heart disease as a cause of death. Carcinoma of the stomach causes one-fifth of the deaths of carcinoma patients; one-fourth to one-third, including the liver and biliary tract carcinoma.

A review of 14,475 cases of gastric carcinoma from the world literature shows 2,861 (18%) resectable. Their report in no way includes the patients in private practice who never enter a clinic, nor the small hospitals of the country. For that reason we undertook to review the cases admitted to the Fourth Division at Bellevue for a 20-year period.

Of 444 carcinomas of the stomach two-thirds were inoperable on admission; only 24 were resectable, 5.4% of the total admissions.

Worth emphasizing are some of the reasons why an early diagnosis is not made. In our study we were amazed at finding *the patient with symptoms of one month's duration has no better chance of removal of the growth than one with symptoms of one year's duration.* Ward cases admitted to Post-Graduate Hospital for the past 20 years were reviewed. We excluded all ward cases admitted from an Attending Physician's office. There were 196 cases and the percentage of resections for the total group was 25.5%, but of 44 patients with symptoms of not over three months duration only nine were resectable—only 10.4% resectability.

It is difficult for the pathologist to diagnose carcinoma from ulcer of the stomach. Does a gastric ulcer become malignant?

Schindler in a very recent article says: "The opinion is now almost untenable. . . . Gastro-enterologists who carefully watch their ulcer patients over a period of decades have never seen such an ulcer develop into a carcinoma. . . . Peptic ulceration of carcinoma may produce a lesion grossly indistinguishable from benign ulcer. There is much evidence that the carcinoma may be completely digested away by peptic activity, leaving a typical benign ulcer. . . . Probably a carcinomatous ulcer is malignant from the beginning."

We have taken the same stand and now, with 13 years of experience, we emphasize that if there is the slightest doubt whether a lesion is gastric ulcer or carcinoma, immediate operation should be advised. There is confusion as to classification by competent pathologists.

An x-ray series properly done will diagnose 95% of the carcinomas of the stomach. If the gastrointestinal x-ray series is negative and the age or symptomatology suggests carcinoma of the stomach, gastroscopy should always be made use of.

If the x-ray examination is negative and the symptoms persist with a low free hydrochloric finding, a second x-ray series should be ordered after a few weeks. In from 15 to 20% of carcinomas of the stomach the free hydrochloric acid will be in normal limits. In the gastric analysis between 50 and 65% of the carcinomas of the stomach have blood in the gastric contents, while the incidence of blood in ulcer of the stomach is lower.

The determination of the cholesterol content of the urine is worth considering. Patients with carcinoma of the gastrointestinal tract may pass in the urine as high as 40 mg. of cholesterol in 24 hours, highest in the early stages of the disease, while a normal person does not pass more than 2 mg.

Figures based on the cases traced are always misleading because the dead cannot reply and the relatives are not interested in replying to follow-ups. Of 100 carcinomas of the stomach receiving the best surgical treatment in the large clinics, 18.7% can be resected and of those that are resectable there will be a 22% mortality. Of the patients leaving the hospital 19% are alive after five years, which means of patients with carcinoma of the stomach only 2.8% will survive 5 years after the best surgical care.

The future of this important disease does not lie in the early diagnosis and radical surgery. Very little has been accomplished in the past two decades from this teaching, if the questionable gastric ulcers are eliminated from the follow-up reports.

[1] J. J. W. Hunt, New York, [illegible] Now.

Stomach cancer attacks men in the ratio 3 to 1 as compared to women. It accounts for one-fifth of the total carcinomatous deaths. Over 88% of the cases fall between the ages of 35 to 70 with the peak between 50 and 55, and females between 55 and 60.

Observation over the past 13 years at Bellevue Hospital of 1200 ulcers of the stomach and duodenum leads to the conclusion that ulcer rarely if ever becomes a carcinoma of the stomach. In a previously reported series of ours of 104 gastric ulcers, in 9 differentiation between ulcer and carcinoma was not possible. All were advised immediate operation and eight submitted. Six were found to be ulcers by the pathological department.

The teaching of early diagnosis and immediate operation in carcinoma of the stomach offers little as to ultimate cure. The patient with the short history has no better chance of a permanent cure than the one with a long history.

Here's another[2] with something startling—and this a bit hopeful—to say.

By foster-nursing the progeny of females of cancerous stocks to females from low-cancerous strains, it is possible to reduce the incidence of cancer in the fostered mice and their progeny. Foster-nursing delayed for 24 hours or longer after birth had little effect on the incidence of tumors. Mice of low-cancerous strains nursed by females of cancerous strains have a higher incidence of tumors than do the controls, but this incidence does not compare with that observed in mice of strains having a high incidence. If the fostered mice of low-cancerous strains are used to nurse susceptible animals, a high incidence will result.

The active influence in the milk may be necessary for the induction of tumors by estrogenic hormones and, when this is obtained by nursing, tumors may be induced in mice of strains considered to be non-susceptible for the development of spontaneous tumors of the breast.

It is suggested that mothers having any breast tumors in their family should not be permitted to nurse a girl baby, nor to put it to her breast even once.

2. I. J. Bittner, Bar Harbor, in *Trans. & Studies of the Col. of Phys. of Phila.*, Dec.

PHYSICAL THERAPY FOR HARD AND SOFT TISSUE

Our instruction in physical therapy leaves much to be desired. An article[1] from a trustworthy source gives some practical points.

One should never use the phrase, "restoration of function." Rather one should say "maintenance of function."

Active motion should be carried out with every joint that need not be immobilized in the treatment of fractures. A Colles' fracture should never be put up in a heavy cast and supported by a sling, for when the cast is removed the patient will be unable to use his shoulder. This type of patient should be instructed that every day he must put his hand behind his head and behind his back.

Swelling of the tissues is a great impediment to proper, quick recovery. Edema may be relieved by heat, massage and motion. Swelling prevents normal motion of joints. Absorption of blood and edema fluid causes adhesion formation.

Active motion results in decrease of swelling. "The heart of an extremity is in its muscles," which intermittently pump the blood forward in the veins and out of the extremity. Gentle massage will decrease swelling and relieve pain and muscle spasm. Heat increases swelling and relieves pain; heat should be followed by massage, which increases the venous and lymphatic circulation.

The whirlpool bath (a small tank containing warm water which is rapidly circulated by a motor) may be made inexpensively. It provides heat, massage (through the action of the moving water and air bubbles) and active motion and the patient is encouraged to move his extremity while under the water.

Deep heat should not be applied early in the treatment of fractures, as the increased arterial flow may lead to decalcification. Superficial heat may be applied by a cheap infrared bulb in a home-made baker, an ordinary electric-coil heater, heat pad or hot-water bottle.

Short-wave diathermy heat penetrates deepest, and is suitable in the late treatment of fractures.

Early active motion will give much better results in tendon surgery. If tendons are sutured with a non-absorbable suture, and not completely immobilized longer than from 7 to 10 days, few adhesions will form. If adhesions have formed, heat should be used for several months, and each treatment should consist of mild heat for half an hour or more. Also of value are deep massage; forced movement, to stretch the adhesions; and galvanism (the negative pole softens scars) or faradic stimulation, if the muscles are weak.

In cases of varicose ulcers, bedsores and other indolent ulcers ultraviolet rays, light and frequently repeated stimulates healing.

Sinusitis of infective origin is much helped by diathermy or infrared therapy.

1. M. E. Knapp, Minneapolis, in *Journal-Lancet*.

THE WAYS OF LAW AND MEDICINE

A RECENT ISSUE of *The Bulletin of the New York Academy of Medicine* carried several essays bearing on the relationship between The Law and Medicine. Some of the teaching of three of these is here reproduced as interesting and instructive.

I

First comes a Justice[1] of the Supreme Court of New York with a good deal of helpful comment.

Let me commend to my brethren at the Bar the injunction of Ecclesiasticus: "Honor the physician with the honor due unto him." A roctir appearing in court is entitled to the respect, the courtesy and the consideration due to a professional brother. Unhappy is the lot of a client whose lawyer is foolish enough to resort to a rude, unfair cross-examination of a doctor. Indeed it is the rare exception for a Judge to sit by and ignore the extravagance of bitter and misleading cross-questioning.

As to this latter statement, it does not apply to the method of conducting our courts. Far from it. Dr. Wm. H. Taylor told his classes: "Most teachers of Medical Jurisprudence instruct their classes of doctors-to-be, to, when on the stand, depend on the protection of the Court." Then, with a wry smile, "No teaching could be more fallacious. I urge upon you gentlemen that you depend on yourselves, and follow that scriptural admonition, 'Resist the devil and and he will flee from you'." In this section of the country doctors will still do wel to follow Dr. Taylor's teaching.

It has been my observation that of doctors who give testimony in court there may be said to be five kinds.

The careless doctor—careless in his appearance, in the way he has kept his records, in his manner of testifying; careless in answering before he has even grasped the purport of the question.

The doctor who doubts everything. He is generally a man who knows his subject, but is constitutionally unable to make up his mind and to express any opinion.

The noisy, pompous doctor—of boundless and confident conceit. He knows and gives the answers before he is even asked; with an evident and irritating sense of superiority he talks down to judge and jury, and is so cocksure of everything that he soon becomes the architect of his own ruin.

The technical, lecturing doctor—who seeks to impress the court and jury and attempts to substitute for ability and for a candid and sound medical opinion what has been aptly termed "the mutterings of robustious nonsense."

The sensible, competent doctor; most of those who testify in court belong to this class. This doctor carries himself with unassuming professional dignity. He answers questions directly, without long and learned dissertations. He uses a minimum of technical terms, and when he finds it necessary to use them, explains them in plain, simple language. He is the master of his temper and slow to anger, no matter how great the provocation. His patients call him blessed, and to the court he is "As an hiding place from the wind, as rivers of water in a dry place, as the shadow of a great rock in a weary land."

1. B. L. Shientag, Justice of the Supreme Court of New York.

II

Another lawyer[2] who says kind words for doctors speaks of the desirability of that *ignis fatuus*, "speedy and inexpensiv e justice"!

In recent years, some have come to question whether the judicial process is the most effective method for deciding the medical problems that arise in connection with the numberless issues in which the physician may give testimony. At present, our courts are concerned with medical testimony mainly in negligence cases. Then, too, there are the malpractice cases. Occasionally there arises the issue of mental incompetency. It is important that the truth be determined speedily with as little complication as possible, and as inexpensively as the situation will permit.

From time to time, various proposals have been brought forward, designed to do away with supposedly biased testimony on the part of the physician, to eliminate conflicts in expert opinion, and to assure speedy and inexpensive justice to claimant and defendant in civil cases, and to the public and the defendant in criminal cases.

It has been proposed that there be impartial experts, not selected by either side, in both civil and criminal cases. I do not now offer any opinion as to the merits of these proposals. They can be separately considered, but I refer to them now because their origin is to be found in the intense dissatisfaction or, if you will, misunderstanding as to the character of medical testimony given day by day in our busy courts.

Americans have indicated some disapproval in connection with the work for which we, as lawyers and doctors, are jointly responsible.

A century and a half ago a judge told the House of Lords: "Hardly any weight is to be given to the evidence of what are called scientific witnesses."

Now medical and other expert scientific testimony is given a fair chance in our courts with a minimum of judicial derision and is even occasionally relied on in our appellate courts in finding a basis for sustaining or reversing a judgment.

The broad area of honest disagreement is so evident in a mass of border-line cases of mental disease that it is not surprising that experts differ in these cases. Very rare indeed is the specialist of good standing who will testify to what he does not believe. He values the ogod opinion and the goodwill of his scientific fellows. Primarily, however, it is because he is an honest man.

Just as the lawyer who is discourteous to the doctor in the court room loses the good-will of the jury, so, too, does the doctor fall in esteem when he is irritable, ill-tempered, uppish or opinionated. The experienced medical witness knows his advantage if he is denied the respect due to his position; that a cross-examination which is unsound carries within itself its own undoing. He knows the cross-examiner has an accumulation of medical information and probably is aided and guided by a physician who has studied the case and has competently advised the lawyer.

He should fully refresh his recollection concerning all of the facts observed by him, and then fully reflect on their significance medically; and then, too, take the pains to refer to a test here and there, as an additional help in sustaining his opinion in his mind, at least, and giving strength to a worthy cause.

The medical witness should know that few jurors understand the meaning of arteriosclerosis; that a thrombosis has about as much significance as a binary star, and that only a small fraction of them have ever heard the word edema. They do not know whether sternum is a heater or a breast-bone.

It is suggested that plain English be used first, and the scientific term, if really necessary, be used later.

Doctors dislike the hypothetical question. We can hardly blame them. Annoying and unsound as the hypothetical question is, it is the best the courts have been able to work out so far; and if the doctor is patient, and if there is a competent lawyer present in court, he will have an opportunity to explain fully his views, his reasons, and why he cannot answer yes or no in full truth. Judges always give witnesses an opportunity to explain under such conditions.

2. G. Z. Medalie, Vice-President, The Association of the Bar of the City of New York.

III

A doctor[3] very recently President of the American Medical Association contrasts the ways of the lawyer with the ways of the doctors, each ostensibly trying to arrive at the whole truth.

Both Medicine and The Law have been influenced, modified and changed by their social and political environment and today the two stand an equal chance of being absorbed by the bureaucracy of government and liquidated as individualistic professions of public service.

The doctor calls upon or receives his patients, asks questions, receives courteous replies and prescribes treatment by giving orders. The physician looks upon disease as a bodily disorder characterized by a lack of proper physiological function and he attempts to reëstablish orderly sequence of function. Subconsciously, the physician looks at the law as a system of legal therapeusis applied to a disordered society. In court, however, he finds himself placed in the witness box, takes orders not always courteous and is instructed to give categorical answers—"yes or no!"

The doctor as a witness of fact enjoys no more privileges than any other witness of fact, and he is required to give a statement without opinion as to what has come to his knowledge by contact with the patient. In most of the States, however, the doctor, as a witness of fact, a "chiseling" lawyer forces him to become an opinion witness, without receiving remuneration for opinion testimony. It is held by the New York courts that a physician's knowledge is part of his occupation which no litigant has a right to use without proper compensation.

When we review the rules surrounding medical expert testimony it is apparent that almost any egostitically inclined physician may qualify as an expert. It would appear that in the solution of this difficulty lies the future of medical-expert testimony. A Court of Appeals has unanimously upheld the position which prohibited the medical expert from recovering a fee for services rendered to an injured employee under the Workmen's Compensation Law until the doctor rendering the services had established his qualifications with the Workmen's Compensation Board conducted by the Medical Society of the State of New York.

I wonder if it is always a good thing for society to have only experts. There are so many limitations to the expert in that his knowledge becomes so refined and his approach so circumscribed that he is very apt to have lost common touch with actual conditions. Technical facts can always be brought within the comprehension of an average jury.

3. C. G. Heyd, M.D., New York.

IV

This Journal has many times called attention to the obvious fact that, if the lawyers' ways of getting at the facts in any case—*i.e.*, in court—are right, then the doctors' ways of getting at the facts in any case are wrong; and *vice versa*. It is said

that a North Carolina doctor once answered Clerk of the Court's: "Do you solemnly swear that the evidence you give . . . . . is the truth, the whole truth, and nothing but the truth," thus plainly, honestly and pertinently: "I do, so far as the lawyers will let me."

Here comes a lawyer who, evidently, agrees with doctors that doctors' methods of seeking out the facts are much more rational than are those of lawyers, much better calculated to elicit the truth.

He cites the instances to prove conclusively that The Law—made by lawyers, administered by lawyers—has not yet got to the place where one can not, with justice, apply to it Mr. Bumble's trenchant characterization.

My workday life has touched constantly both law and medicine. I have often asked myself: What is the inevitable and fundamental difference between the two? What is the difference in the nature of cerebration involved in them? I think I may safely say in reply that the essential difference lies in the fact that law is founded on human invention while medicine depends on and results from discovery.

There obviously is nothing of an immutable nature in an invention, especially in a legal invention. A discovery is discernment of something that has already existed, but which has not previously been known. It takes more brain power to discover than to invent; and that fact is nowhere better illustrated than in a comparison of law with medicine.

Invention in the field of medicine is an ancillary thing. Dr. Marion Sims had a job to do which required a special instrument; so he bent an old spoon, and as a result the duckbill speculum was invented.

Medicine has given to the world some novel and ingenious inventions, but prompted by discoveries which were of a far more arresting nature.

The Public is a fickle creature, forgetful, ungracious, unappreciative, thankless. Most of the world capitalizes and emphasizes the unimportant things of life, the vainglorious and the paltry, and remains unmindful of the weightier matters of human progress. Our hero worship is directed toward the destructionists.

Just how does the legal mind approach a problem. Take the case in which an employee is injured due to his employer's fault. The employer engages a physician to attend the injured person, and the physician, being an incompetent one, gets a bad result. The law holds that there is no responsibility on the employer for the physician's malpractice if there was no affirmative negligence in employing the incompetent physician. But, if in such case the patient were himself to employ the same physician and the same result were to follow, the employer would be held responsible not only for the original hurt but also for the aggravation thereof caused by the physician's errors. Do you ask me to explain that foolish conflict of "principle?" My answer is that there is no sensible explanation. I have not even been able to discover a foolish one.

ed hurt to another, the wrongdoer must make the injured one whole. Likewise, if an employee brought about his own hurt, the master could not be held responsible therefor.

But under both federal and state laws railroads are held responsible for injuries suffered by their employee, even when the railroad is not negligent and when the employee caused his own injury by his own fault. Do you ask me why? My reply is that this anomaly is simply due to the manner in which the legal mind works.

And this in a world in which equal rights to all and special privileges to none is supposed to be a vital principle of government.

If you wanted to know what was the matter with your watch, I assume you would not consult a gardener; you would go to a watchmaker. But the legal mind does not think that way at all. If the death of a person is the subject of a legal injury and the question arises as to the cause of death, the decision is reached in a very curious fashion. The only reason why we are not daily jolted off our feet by its curious and bizarre nature is that we have been living under the system for centuries.

Logically a medical question should be decided by physicians. But the law does not work that way. It says, for example, that the proper way to decide whether or not locomotor ataxia is traumatic, or the part which an aortic aneurysm has played in one's death, we get a mechanic, a merchant, a clerk, a banker, a laborer, a butcher, a baker, a candlestick maker, an automoible salesman, a longshoreman, a brick mason and a farmer. We swear them in and tell them to go to it. When they come to a conclusion, it is binding, because as you must know, our system of trial law is based on the fundamental proposition that the finding of facts is within the province of the jury, however difficult and scientific the subject at hand may be.

The ways of the legal mind are like the love of God, they pass all understanding. For my part, I like the methods of the medical mind. You should feel proud of your heritage and the sort of milieu in which you live and move and have your being.

The teaching in the law, certainly the teaching by example in our courts, is not for the bringing

out of the truth; but on the contrary, of its suppression and distortion. Hence, no one conversant with this matter will be surprised that the attempt of even an extraintelligent lawyer to make a statement of medical historical fact falls down lamentably. The Sims speculum is no more a duckbill speculum than chalk is cheese.

It is suggested that this gentleman of the law call by the office of Dr. C. J. Andrews and take a look at both these specula.

English and American law for centuries demanded that when one person, through negligence, caus-

This gentleman of The Law ought to be in a legislative hall improving the laws, giving them some sweet reasonableness. It is plain that he is not happy in the practice of The Law as it is; and certainly those who are being practiced on are not happy.

All of us need the leadership of Mr. Brittingham in The Congress. Will not you Virginians elect him and have us of other States rise up and call you and him blessed?

4. S. Brittingham, LL.B., Norfolk, Va., in *Jl. Fla. Med. Assn.*, Sept.

SARCOIDOSIS

(H. I. Spector, St. Louis, in *Jl. Mo. State Med. Assn.*, Feb.)

Sarcoidosis was first described in 1869. Its cause is unknown. The bone lesions resemble more nearly those of leprosy than those of tuberculosis. The structure, whether in the lungs, eyes, skin or bone, is the epitheloid cell tubercle with or without giant cells, with or without fibrosis.

The paucity of symptoms and signs is in striking contrast to the extent of the anatomic involvement. Little or no fever, occasional cough and expectoration and loss of weight. Rales rarely, the lungs are in diffuse fibrosis which may lead to cyanosis and progressive myocardial failure. Common complication is pulmonary tuberculosis.

In the differential röntgenographic diagnosis: Hodgkin's disease, hilum tuberculosis, miliary tuberculosis, miliary carcinomatosis, diffuse nonspecific post-tuberculous fibrosis, pulmonary congestion, fungus disease, erythema nodosum and silicosis.

The disease may last for years. Spontaneous healing has been reported. The disease may relapse, involving one organ after another slowly.

There is no specific treatment. Arsenic in one form or another has been tried. Ultraviolet light and deep röntgen ray and radium have been tried.

Fat Fallacies.—Unless at least minimum amounts of fatty acids are present in the diet, the skin becomes scaly and inflamed, growth is interfered with, reproductive processes are impaired and kidney disorders may result. Fats spare B vitamins. American lard contains as much vitamin D as summer butter. Fats spare proteins. The natural fats in foods increase their palatability; digestion is better if food is enjoyed as eaten. Data on the digestibility, flavor and color of dietary fats show no significant differences between animal and vegetable fats.—*Carlson.*

THE PUBLIC is invited for the Evening Programs.

Provisional

PROGRAM

FORTY-FOURTH ANNUAL MEETING

Tri-State Medical Association

of

THE CAROLINAS and VIRGINIA

Nothing is so firmly believed as what we least know.
—*Montaigne.*

If thou couldst, doctor, cast
The water of my land, find her disease,
And purge it to a sound and pristine health.
—Macbeth, Act V

The want of energy is one of the main reasons why so few persons continue to improve in later years. They have not the will . . . . Hardly any one keeps up his interest in knowledge throughout a whole life. The waxen tablet of the memory, once so capable of receiving clear impressions, becomes hard and crowded . . . . The student, as years advance, rather makes *an exchange* of knowledge than *adds to* his stores.
—*Jowett's Introduction to Plato* (Quoted by Osler on flyleaf of his "On the Educational Value of a Medical Society".)

GREENVILLE

February 23d and 24th

1942

POINSETT HOTEL

TRI-STATE MEDICAL ASSOCIATION
OF THE
CAROLINAS AND VIRGINIA

President
DR. A. G. BRENIZER
Charlotte, N. C.

President-Elect
DR. G. R. WILKINSON
Greenville, S. C.

Vice-Presidents
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DR. G. H. BUNCH
Columbia, S. C.
DR. H. J. LANGSTON
Danville, Va.

Sec.-Treas.
DR. J. M. NORTHINGTON
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Councillors
Three Years to Serve
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Pelzer, S. C.
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Statesville, N. C.
DR. ALLEN BARKER
Roanoke, Va.

Two Years to Serve
DR. J. R. YOUNG
Anderson, S. C.
DR. R. P. MOREHEAD
Winston-Salem, N. C.
DR. O. B. DARDEN
Richmond, Va.

One Year to Serve
DR. F. S. JOHNS
Richmond, Va.
DR. D. B. KOONCE
Wilmington, N. C
DR. W. H. PRIOLEAU
Charleston, S. C.

COMMITTEE ON ARRANGEMENTS

DR. GEO. R. WILKINSON, *Chairman*
DR. W. M. CARPENTER, Greenville
DR. W. S. DENDY, Pelzer

TO THE ELIGIBLE DOCTORS OF THE CAROLINAS & VIRGINIA GREETING:

The Tri-State Medical Association is Unique:

First, it offers a medium to doctors in general practice and in the specialties of Medicine and Surgery of three neighboring States, North and South Carolina and Virginia, to know each other and express themselves.

Second, different from other, larger—and some smaller medical societies, all authors of papers and clinics appear before the one assembly to present their subjects to general practitioner and specialist.

Third and finally, guest speakers are similarly chosen to give the membership a report of the most recent programs in Medicine as a whole.

A mere naming of our guest speakers suffices to show that this will be no ordinary medical meeting; but one which, however many others you have attended in the past year, you can in no wise afford to miss.

Dr. Hugh Hampton Young of the Hopkins will give us the most authoritative information on Surgery of the Prostate, and he will include in his presentation a discussion of Prostates in Females. The names Hampton and Young can never fail to evoke enthusiasm anywhere in Tri-State territory, certainly never anywhere in South Carolina.

Dr. Harold L. Foss of Danville, Penn., will tell us what has been learned from an intensive study of 3000 cases of gallbladder disease—a condition which gravely concerns us all.

Dr. Russell L. Cecil of New York City promises encouraging facts for us to take home to our patients afflicted with arthritis who have "suffered many things of many physicians and had cure of none."

Dr. Benjamin Sieve of Boston is to tell us just how he has so juggled his vitamins as to return gray hair to its normal color, and, as a by-effect, made hitherto barren couples to bring forth young after their kind.

Dr. R. B. Chrisman, Jr., formerly of the John Gaston Hospital, Memphis, now of Camp Forrest, Tenn., will report on highly gratifying results from

a safe, rapid and endurable means of doing away with an excess of this "too, too solid flesh."

The Tri-State is meeting this year in Greenville, S. C., the home of one of the most energetic and resourceful of local medical societies—a body of doctors who are as highly competent in society work as in the conduct of their individual practices.

The Tri-State meeting would portend to be one of the best ever held. The days are the 23rd and 24th of February.

MEMBERS—Maintain your membership and attendance. Bring in others.

FORMER MEMBERS—Renew your membership and attendance.

ELIGIBLES—To paraphrase Scripture slightly: Come with us and we will do each other good.

Fraternally yours,
ADDISON G. BRENIZER, Pres.

NOTA BENE

Be giving thought to the officers to be elected. The President-Elect is to come from the Virginia membership. A Vice-President is to be elected from each of the three States. The Secretary-Treasurer may be elected from any one of the three States. The Council fills its own vacancies. The meeting in 1943 will be held in Virginia.

Come and take an active part in the meeting. If you are not on the program, present your ideas in the discussion of a paper. Bring your medical neighbor. Whether he be a member of the Association or not, he will be gladly welcomed. And he will wish to become one of us.

There will be ample time for the reading and the discussion of each paper. The program is purposely left uncrowded so that all may express their views.

Study of the program will reveal that it covers a wide area of the field of medicine and surgery and deals with recent important, practical advances.

PROGRAM

Greenville, February 23d-24th

Informal Entertainment is arranged for early arrivals on the evening of Sunday, February 23d

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Monday, February 23d
10 a. m.

CALL TO ORDER—

DR. GEO. R. WILKINSON, Chairman Committee on Arrangements.

GREETING—

DR. J. WARREN WHITE, President, Greenville County Medical Society.

RESPONSE—

The President of the Association.

THE CHAIRMAN hands over the meeting to the President.

TWENTY minutes is the time limit for each essay and this includes showing of pictures.

In so far as is feasible this order and arrangement will be adhered to.

Each essay is to be handed to the Reporter following its reading, together with any illustrations or other material used with the paper. To those desiring to review their papers before publication, it is suggested that they make carbon copy for such purpose.

Free discussion will be encouraged, as it is believed that in this way most good can be derived from the presentation of a subject. In arranging the program thirty-five minutes is allowed for the presentation and discussion of each essay—and some leeway provided for. The carrying of an outline of each essay promotes free and to-the-point discussion.

Having someone on the program to open discussion does not mean that further discussion is not desired. He is on to get the discussion started promptly.

Time limit for each speaker in discussion FIVE minutes.

WHAT TONSILLECTOMY WILL DO, AND WHAT IT WILL NOT DO—

DR. CLAY W. EVATT, Charleston

Discussion opened by—

DR. W. J. BRISTOW, Columbia

DR. W. M. CARPENTER, Greenville

SOME CLINICAL ASPECTS OF BRAIN TUMORS—

DR. A. A. BARRON, Charlotte

THE ASSOCIATION of headache, convulsions, characteristic eye-findings, unsteadiness, obesity, mental changes, etc. as related to the diagnosis of brain tumors is briefly discussed. The recognition of the signs and symptoms and their evaluation based on pathological knowledge of the more common brain tumors, is emphasized and illustrated by case reports.

Discussion opened by—
Dr. S. H. Shippey, Rock Hill
Dr. J. H. Rainey, Anderson

WARFARE: ANTITHESES IN HUMAN BEHAVIOR—
Dr. James K. Hall, Richmond
Westbrook Sanatorium
Discussion opened by—

GASTRIC SECRETION—
Dr. C. M. Caravati, Richmond
The value of gastric secretory studies is considered. A simple but adequate method is suggested. Variations in acid curve, their significance and possible correction are reviewed.
Discussion opened by—
Dr. Hugh Smith, Greenville
Dr. Eugene Zemp, Columbia

THE PREVENTION OF DIPHTHERIA AND SCARLET FEVER IN CONTACTS—
Dr. I. S. Barksdale, Greenville
Discussion opened by—

Dr. J. Adams Hayne, Columbia
1:00 p. m.—Recess

2:00 p. m.—Reconvene

THE VALUE OF ELECTROENCEPHALOGRAPHY IN THE DIAGNOSIS OF CONVULSIONARY DISORDERS AND IN THE DIAGNOSIS AND LOCALIZATION OF PATHOLOGICAL PROCESSES OF THE BRAIN (Lantern Slides)—
Dr. Hans Löwenbach, Duke University
Discussion opened by—
Dr. Howard Masters, Richmond
Dr. R. Burke Suitt, Duke Uuiversity

ADDRESS—
WHAT CAN WE DO FOR THE PATIENT AFFLICTED WITH ARTHRITIS?—
Dr. Russell L. Cecil, New York City
Professor of Medicine, Cornell University

ADDRESS—
THE SURGERY OF THE PROSTATE: PROSTATES IN FEMALES AND FEMALE PSEUDOHERMAPHRODITISM
(Lantern Slides and Motion Pictures)—
Dr. Hugh Hampton Young,, Baltimore
Professor of Urology, Johns Hopkins University

CONDITIONS SIMULATING CARDIAC EMERGENCIES—
Dr. T. R. Littlejohn, Sumter

In choosing this subject it is my purpose to call your attention to some conditions so often confused with a true heart failure. Much has been written in recent years about the symptoms of heart decompensations, but very little emphasis has been put on the signs that are not related to the heart; of these, this paper treats.

Bronchial asthma is often mistaken for cardiac asthma.

Root pains, often confused with coronary thrombosis, should be easily recognized in the majority of the cases.

Gallstones are often mistaken for coronary occlusion, but the position in which the patient lies, in most cases, tells the story.

Differentiating angina and coronary thrombosis in the neurasthenic states, is dependent not so much on what the patient tells you, as how he describes his condition. The neurasthenic states have very little effect on the length of the life of the individual.

Discussion opened by—
Dr. H. F. Starr, Greensboro
Dr. W. S. Fewell, Greenville

EXTRAUTERINE PREGNANCY—
Dr. F. S. Johns, Richmond
Johnston-Willis Hospital
This report is from a private general hospital with a yearly capacity of more than 5,000 patients, including about 400 obstetrical deliveries, per year. The operative procedure makes no claims for new or experimental methods of treatment; rather, we lay emphasis on the practice of sound conservative surgery by qualified surgeons.

The one death in this series is reported in detail with a full discussion, with the aim at prevention of future fatalities.

Discussion opened by—
Dr. R. H. Crawford, Rutherfordton
Dr. H. J. Langston, Danville

THE MATTER OF TRANSFUSION OF WHOLE BLOOD AND OF PLASMA—
Dr. John Elliott, Salisbury
Rowan General Hospital
Discussion opened by—
Dr. J. M. Feder, Anderson
Dr. Samuel Orr Black, Spartanburg

6:30—Subscription Banquet Main Dining Room Poinsett Hotel

ADDRESS OF THE PRESIDENT—
Dr. Addison G. Brenizer, Charlotte

ADDRESS OF THE PRESIDENT ELECT—
Dr. George R. Wilkinson, Greenville

ADDRESS—

CAUSE AND TREATMENT OF SYMPTOMS SECONDARY TO PREVIOUS OPERATIONS ON THE BILIARY SYSTEM—

Dr. Harold L. Foss, Danville, Penn.
Surgeon-in-Chief, George F. Geisinger Memorial Hospital

Tuesday, 9:00 a. m.

REPORT OF MEETING OF COUNCILLORS

REPORT OF SECRETARY

(*Few minutes only*)

A BETTER AND SIMPLER WAY OF REMOVING STONES FROM THE URETER—

Dr. Roy P. Finney, Spartanburg

Discussion opened by—

Dr. O. T. Finklea, Florence
Dr. Raymond Thompson, Charlotte

VAGINAL HYSTERECTOMY—

Dr. Geo. T. Tyler, Jr., Greenville

The history, indications and technique of the operation; the modifications of recent authors; the need for relieving relaxation of the bladder supports, and those of the rectum; criteria for satisfactory results; complications; results in author's cases.

Discussion opened by—

Dr. G. H. Bunch, Columbia
Dr. T. C. Bost, Charlotte

SURGICAL TREATMENT OF CARDIOSPASM—

Dr. F. E. Kredel, Medical College of the State of South Carolina

Obstruction of the terminal esophagus in cases of achalasia or cardiospasm which is not relieved by conservative methods may be treated by direct surgical attack. A plastic operation on the cardia, esophagogastrostomy, is the procedure of choice. This operation is similar to the Finney pyloroplasty. Details of a case are presented.

Discussion opened by—

Dr. D. B. Koonce, Wilmington
Dr. W. H. Prioleau, Charleston

THE PROCTOLOGY OF GENERAL PRACTICE—

Dr. W. J. Lackey, Fallston

First Chairman of the Section on General Practice of Medicine and Surgery of the Medical Society of the State of North Carolina; First Chairman of the Section on General Practice of the Southern Medical Association.

Discussion opened by—

Dr. S. M. Schenck, Shelby, N. C.
Dr. D. T. Bridges, Lattimore, N. C.

CLINIC—

ARTHRITIS—

Dr. Russell L. Cecil, New York City
Professor of Medicine, Cornell University

1:00 p. m.—Recess

2:00 p. m.—Reconvene

FACTORS IN CHILDHOOD LEADING TO THE DEVELOPMENT OF WARPED PERSONALITY—

Dr. D. J. Sullivan, Asheville
Highland Hospital

As a student of human nature, and often called upon to decide between functional nervous symptoms and organic physical symptoms, the physician needs keen insight into the personalities of his patients. The physician in his everyday contacts with patients will know by practical experience a great deal about personality, particularly when the stresses of pain and disability break the patient's ordinary state of self-control and the underlying weaknesses and instabilities of his personality become overt. Recognizing the defective personalities for what they are the therapeutic approach to such misfits belongs to a great extent to the field of psychiatry; but the prevention of the development of warped personalities can be aided by not only the pediatrician and family physician, but by all physicians who are parents. A systematic review of the ordinary types of warped personality will be presented, and certain etiological factors appearing in infancy and childhood will be described, and therapy suggested.

Discussion opened by—

Dr. Wm. Ray Griffin, Asheville
Dr. R. Burke Suitt, Duke Uuiversity

STENOSING DUODENAL ULCER AND STARVATION—

Dr. E. S. Boice, Rocky Mount
Park View Hospital

Three badly neglected, almost starved patients have been seen, each with a resulting stenosing duodenal ulcer. All three were saved by a prolonged, intensive, preoperative preparation with blood transfusions, vitamins, etc., plus a two-stage gastric resection. It is doubtful if any one of them would have survived a resection in one stage.

Discussion opened by—

Dr. A. E. Baker, Charleston
Dr. Graham Reid, Charlotte

CLINIC—

ORTHOPEDIC CASES—

Dr. J. Warren White, Greenville
Shriners Hospital

CLINIC—

CORONARY OCCLUSION—

DR. HUGH SMITH, Greenville

UNDULANT FEVER A COMMON CAUSE OF DISABILITY—

DR. J. S. HOLBROOK, Statesville
Station Hospital, Camp Blanding, Florida

Discussion opened by—

DR. GEO. R. WILKINSON, Greenville
DR. C. M. GILMORE, Greensboro

PELLAGRA IN SOUTH CAROLINA—

DR. JAMES ADAMS HAYNE, Columbia
State Health Commission of South Carolina

MEMORIAL SERVICE

DR. JOSEPH T. BUXTON, Newport News
DR. GREER BAUGHMAN, Richmond
DR. ROBERT C. BRYAN, Richmond
DR. C. DeW. COLBY, Asheville
DR. JOHN WYATT DAVIS, Lynchburg
DR. RANDOLPH JONES, JR., Durham

ELECTION OF OFFICERS

8 p. m.

GOITER—

DR. R. B. MCKNIGHT, Charlotte

Discussion opened by—

DR. W. H. PRIOLEAU, Charleston
DR. F. S. JOHNS, Richmond
DR. W. M. SCRUGGS, Charlotte

THE DIAGNOSIS AND TREATMENT OF LESIONS OF THE INTERVERTEBRAL DISC—

DR. W. GAYLE CRUTCHFIELD,
University of Virginia

LOW BACK PAIN and sciatica caused by unilateral herniation of the nucleus pulposus is a well-recognized clinical entity. The diagnosis in almost all cases can be made on the basis of history and clinical findings without the use of lipiodol. The surgical treatment is simple and direct and does not necessitate the removal of weight-bearing structures.

There is another group of cases in which a central herniation of the nucleus pulposus or a posterior protrusion of the intervertebral disc causes bilateral pain not always typically sciatic in distribution. In this presentation, emphasis will be placed on the diagnosis and treatment of these atypical lesions which heretofore have not been stressed.

Discussion opened by—

DR. JOHN STUART GAUL, Charlotte
DR. J. WARREN WHITE, Greenville

ADDRESS—

THE RESTORATION OF HAIR COLOR AND THE CONFERRING OF FERTILITY BY THE USE OF CERTAIN VITAMINS—

DR. BENJAMIN F. SIEVE, Boston
Boston City Hospital

ADDRESS—

A SAFE, SANE, COMFORTABLE AND EFFECTIVE METHOD OF REDUCING FAT—

DR. R. B. CHRISMAN, JR., Memphis
Station Hospital, Camp Forrest, Tenn.

PHYSICIANS NEEDED IN THE PANAMA CANAL ZONE

The Panama Canal is one of the Nation's most vital defense areas. There is a splendid opportunity here for doctors to serve their country during the present emergency.

The U. S. Civil Service Commission has just announced an examination to provide physicians for these important positions. The entrance salary is $4,000 a year, and free transportation by boat or plane is furnished from port of embarkation, the salary beginning on the date of departure from the United States. Applications will be accepted by the Commission in Washington, D. C., until further notice. There is no written test.

Applicants must have been graduated from a Class A medical school with a degree of M.D. subsequent to May 1st, 1920, plus one year of experience in a hospital since graduation. Graduates from schools which require the completion of the internship before granting the M.D. degree (five-year schools) will be regarded as having met the hospital experience requirement. Applicants must not have passed their 50th birthday; however, because of the arduous duties in the tropical climate, applicants between 25 and 35 years of age are preferred.

Applicants must be in sound physical health; they must be active and capable of arduous work. Although appointees are required to pass a thorough medical examination, the physical requirements are not as high as for the army or navy service.

The duties of the position are to serve as District Physician in a small Government dispensary; have general supervision over all medical and surgical activities in the dispensary; operate a general medical and surgical clinic; examine persons entering the Panama Canal Service; visit patients day or night in their homes and on board ship; and to be in charge of business activities of the dispensary.

Further information is given in the announcements which may be obtained, with application forms, at any first- or second-class post office, or from the U. S. Civil Service Commission, Washington, D. C.

NEWS

AMERICAN COLLEGE OF SURGEONS

CHICAGO SELECTED FOR 1942 CLINICAL CONGRESS

Because of the war, the 32nd annual Clinical Congress of the American College of Surgeons will be held at Chicago October 19th to 23rd, instead of in Los Angeles as originally planned. Headquarters will be at the Stevens Hotel. The twenty-fifth annual Hospital Standardization Conference sponsored by the College will be held simultaneously. The programs of both meetings will be based chiefly on wartime activities as they affect surgeons and hospital personnel in military and civilian service.

ASSOCIATION ON MENTAL DEFICIENCY

The Southeastern States Conference was held at Caswell Training School, Kinston, N. C., on January 30th. Dr. W. T. Parrott, Superintendent of Caswell Training School, was host.

Address of Welcome—L. L. Oettinger, Chairman, Board of Directors, Caswell Training School.

Response to Welcome—B. O. Whitten, M.D., Superintendent, Training School, Clinton, S. C.

Round-table auto-introduction at luncheon.

Conference:

Theme: Some Phases of Research in the Field of the Mind. Presiding, Dr. W. T. Parrott, Regional Chairman.

Address—Dr. J. K. Hall, President, American Psychiatric Association, Westbrook Sanatorium, Richmond.

Address—The Significance of Encephalographic Examinations, Dr. Hans Lowenbach, Duke University, Durham.

An entirely successful meeting is reported, with high praise of the enterprise and resourcefulness of the host, Dr. W. T. Parrott.

THE AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS. and THE AMERICAN INDUSTRIAL HYGIENE ASSOCIATION WILL hold their joint Annual Convention in Cincinnati April 13th-17th. Medical and hygienic problems of the present huge task of American industry will be presented in clinics, lectures, symposia and scientific exhibits. The central purpose of the meeting will be to provide a five-day institute for the interchange and dissemination of information on new problems as well as for the consideration of best methods of dealing with them. The industrial physicians have taken responsibility for the program of the first two and one-half days and the hygienists for the remainder of the five days, but most of the subjects chosen for discussion will be of interest to physicians, industrial engineers and executives.

LEXINGTON MAYOR NAMED CHIEF OF HOSPITAL STAFF

Dr. W. B. Hunt, Lexington's mayor, has been elected Chief of Staff of Davidson Hospital, Lexington, N. C.

Dr. J. R. Terry was named staff secretary while Dr. J. C. Leonard, Dr. Milton Block and Dr. Jean Craven, the city's only woman physician, were also named on the executive board. Dr. J. A. Smith, retiring chief of staff, is a former mayor, a member of the City Utilities Commission and chairman of the Tire Rationing Board.

Dr. Hunt is now also chairman of the $7,500 Red Cross war relief campaign, president of the County Medical Society, ex-officio chairman of the Municipal Golf Commission and president of the North Carolina Railroad.

Dr. James Tate Mason, formerly of Seattle, Washington, but now of Boston, and Miss Margaret Elizabeth Thomas, of Bluefield, West Virginia, were married on January 10th. Dr. Mason bears the name of his father, a Virginian, who died a few years ago when President-Elect of the American Medical Association.

Dr. Wm. M. Coppridge, Durham, has been appointed a member of the Council of the Southern Medical Associatiton from North Carolina for a regular Council term of five years. Dr. Coppridge succeeds Dr. Hamilton W. McKay, Charlotte, who, having served the Constitutional limit, was not eligible for reappointment.

Thermal belt medical society—At the mid-winter meeting held at Rutherfordton, N. C., Dr. R. H. Crawford, Rutherfordton, was elected president, succeeding Dr. J. T. Thompson, Shelby. Dr. H. C. Thompson, Shelby, was reëlected secretary-treasurer. Papers were read by Dr. R. H. Crawford, Dr. H. R. Sherrill, Shelby, and Dr. Frank Wood, Marion.

Dr. Robert T. Ferguson has been chosen coördinator for the Medical Care for the Civilian Defense Council in Charlotte and Mecklenburg County, N. C.

Dr. McChord Williams, announces the opening of offices at 222 Professional Building, Charlotte, N. C., for practice in general surgery. Dr. Williams, a native of Charlotte, was educated at Duke, at Chapel Hill and at Harvard.

Dr. Carl E. Badgley, professor of Orthopedic Surgery in the University of Michigan, was elected president of the American Academy of Orthopedic Surgeons January 15th, to succeed Dr. Oscar L. Miller, of Charlotte, N. C.

Dr. L. R. Shaw, of Statesville, has been elected Secretary-Treasurer of the Iredell-Alexander County Medical Society to fill out the unexpired term of Dr. J .S. Holbrook, who has been called to duty in the Medical Corps of the United States Army.

Dr. F. C. Carden, Negro physician of Statesville, has been called to Washington into the United States Public Health Service.

Dr. P. P. Holt, of Erwin, Chief of Staff at Good Hope Hospital and Harnett County's oldest practicing physician, at a meeting of the Harnett County Medical Society January 15th, was paid tribute by prominent doctors of eastern North Carolina.

Dr. J. R. Johnson, Chief of Staff at Harnett County Hospital, Dunn, expects to be called for duty in the Army early in March. He volunteered his services in the medical corps. He will be the second member of the hospital staff to join the Army. Harrel Pope, who resigned as administrator last month, began his service at Fort Bragg last week.

Dr. Wingate M. Johnson, of Winston-Salem, editor of the North Carolina Medical Journal, and frequent contributor to current and to medical literature, spoke by invitation to the Millbrook Woman's Club, near Raleigh, on January 28th. His subject was: The Physician in Literature.

Dr. E. J. WANNAMAKER, Charlotte, is the new president of the Mecklenburg County (N. C.) Medical Society.

MARRIED

Dr. Samuel Watson Page, Jr., of Greenwood, South Carolina, and Miss Edrie Ary Martin, of Hillsboro, North Carolina, were married on January 31st.

Dr. Andrew P. Newcomb, of Henderson, and Miss Felcie Clara Mize, of Raeford, were married in Duke University Chapel on January 28th.

Dr. C. Noel Hall, of Somerset, Kentucky, and Miss Ola Livingston Strickland, of Salisbury, were married on December 29th. Dr. Hall is serving an interneship in Memorial Hospital, Charlotte. His bride is a graduate of the Nurses Training School of Grace Hospital, Morganton.

DIED

Dr. Robert M. West, 72, Salisbury physician, died suddenly on January 14th at his home. Funeral plans are incomplete. Dr. West was a native of the eastern part of North Carolina, a graduate of the Medical College of Virginia, Richmond, in 1900, and had practiced his profession in Salisbury for 38 years. He is survived by three children.

Dr. John Augustus Pollard, 68, died of a heart attack at his home in Lynchburg, in the night of January 24th. Dr. Pollard was a native of Bedford County, Virginia, a graduate of the University of Louisville and had been practicing medicine nearly 50 years. He had lived in Lynchburg 22 years.

Dr. William Pinckney Knight, 70, who had practiced medicine in Greensboro for 40 years, died February 2nd, at St. Leo's Hospital, Greensboro, N. C., after being in ill health for some time and a patient at the hospital for three weeks. Dr. Knight was a native of Rockinhgam County, educated at Oak Ridge Military Institute and Baltimore Medical College, graduating from the latter in 1898. After practicing in Alamance for three and one-half years, Dr. Knight removed to Greensboro in 1902.

Dr. Harry L. Myers, 72, prominent eye, ear and throat specialist of Norfolk, died at his home January 5th. Born at Waynesboro, Va., he was graduated from Fishburne Military Academy and the University of Virginia. After postgraduate work in New York and Europe and two years as assistant to Dr. Joseph A. White, in Richmond, Dr. Myers practiced in his specialty from 1892 to 1897 in Danville, since which time he practiced in Norfolk continuously.

Dr. W. F. Williamson, 62, died January 12th at his office in Richmond.

OUR MEDICAL SCHOOLS

Medical College of Virginia

Dr. E. W. McHenry of the University of Toronto and Mr. Jackson Davis of the General Education Board were recent college visitors.

Dr. George E. Snider, Dr. James Burke, and Dr. Gilman R. Tyler have received their commissions as captains in the United States Army. These three alumni served in the hospital division of the college and were called to the service last year. They are located at the Lawson General Hospital, Atlanta.

The Phelps-Stokes Fund has made a grant of $100.00 for the Saint Philip school of nursing library.

The new wing of the Saint Philip Hall, made possible through a grant of $130,000 from the General Education Board, will be completed this month. This new addition will provide seventy-four new bedrooms, enlarged library and classroom facilities. The enrollment of this separate Negro unit of the institution has doubled in recent years.

The Southern Medical Association has accepted the invitation to hold its annual meeting this year in Richmond and will use college facilities to a considerable extent. The meeting is tentatively scheduled for November 9th-12th.

President W. T. Sanger and Dean Lee E. Sutton, Jr., will attend the annual meeting of the Council on Medical Education and Hospitals of the American Medical Association, and President Sanger will also attend the annual meeting of the Dental Council of the American Dental Association. Both meetings will be held in Chicago..

Dr. William B. Porter, professor of medicine, will be one of the speakers on the program of the New Orleans Graduate Medical Association, March 2nd. This program will be sponsored by Tulane University school of medicine.

Dr. H. Hudnall Ware, Jr., associate professor of obstetrics, attended a meeting of the Tri-County Medical Association, Fairmont, West Virginia, January 27th, and spoke on Ectopic Pregnancy. Doctor Ware also attended the annual meeting of the Board of Directors of the Birth Control Federation of America in New York City, January 29th-30th.

University of Virginia

Following the close of the current nine-months session the Medical School of the University of Virginia will change to a twelve-months basis; work will be conducted the year round for the duration of the national emergency. Continuous operation of the Medical School will reduce the period of medical training from four to three years. The session 1942-43 will open on June 29th, and will comprise four quarters of eleven weeks each. No radical changes are contemplated in the current curriculum, except that electives will be discontinued and a substitute course will be immediately organized in Essentials of Military Medicine, comprising traumatic surgery, first aid, blood plasma banks, neuropsychiatry, preventive medicine and aviation medicine.

PREPARING PATIENTS AT HOME FOR OPERATIONS IN HOSPITAL

(G. W. Gay, Ironton, in *Jl. Mo. State Mde. Assn.*, Feb.)

I was astonished when first entering practice at the number of older patients who carried a catheter in the hat band. To place these patients under the care of specialists most of them could ill afford the expense, so every attempt was directed toward caring for them without hospitalization.

Continuous catheter drainage in most cases has been carried out in the home, the patient reporting to my office daily for observation, irrigation, blood pressure readings and blood chemistry findings. These patients, after preliminary drainage, were then admitted to the hospital for operation as space became available.

SYPHILIS and GONORRHEA are among the major destroyers of sight, being responsible for 17 per cent of the blindness in the United States.—*National Soc. Prevention of Blindness.*



Synkayvite* represents another triumph of Roche synthetic chemistry. This new water-soluble vitamin-K compound is highly active and can be given by mouth or parenterally. Upon oral administration it is readily absorbed from the intestinal tract so that bile-salt medication is unnecessary. Parenteral administration is a real advantage in emergencies in which effectiveness of oral therapy is impaired by bleeding in the intestinal tract. Small volume doses—1-cc ampuls.

Indications: hemorrhagic disease of the newborn; obstructive jaundice; biliary fistula; gastrointestinal fistula; intestinal obstruction; ulcerative colitis; sprue.

Packages: Tablets, 5 mg., bottles of 40, 100, 500, and 1000. Ampuls, 5 mg. (for infants) and 10 mg. (for adults), each strength in cartons of 6, 25, and 100.

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BOOKS



THE BLOOD BANK AND THE TECHNIQUE AND THERAPEUTICS OF TRANSFUSIONS, by Robert A. Kilduffe, A.B., A.M., M.D., F.A.C.P., Director, Laboratories, Atlantic City Hospital, City Bacteriologist, Atlantic City; Serologist Municipal Hospital for Contagious Diseases, Atlantic City; and Michael DeBakey, B.S., M.D., M.S., F.A.C.S., Assistant Professor of Surgery, School of Medicine, Tulane University of Louisiana. With 214 illustrations and one color plate. *The C. V. Mosby Company,* St. Louis. 1942. $7.50.

The history of this procedure is traced from the mythological phase onward to blood banks and dried plasma. Not only the indications, but the contraindications as well are given. The number of practical advantages of the use of plasma over that of whole blood are pointed out.

The military aspects of transfusion are gone into in great detail. Special types of transfusion and the technique of the necessary preliminary tests are given a chapter each; as are anomalous blood typing reactions, the blood bank, changes in stored blood, the operation of a bank, plasma transfusion, preparation and preservation of citrated plasma, preparation and concentration of dried plasma, methods and technique of transfusion, and complications of blood transfusion.

Each chapter has its own long list of references, numbering from ten to a thousand, thus evidencing an enormous amount of research work in order to cover the subject adequately and to give due credit to those who have worked in this field.

An excellent covering of one of the most important of our therapeutic procedures.

LABORATORY DIAGNOSIS OF PROTOZOAN DISEASES, by Charles Franklin Craig, M.D., M.A. (Hon.), F.A.C.S., F.A.C.P., Col., U. S. Army (Retired), D.S.M. Emeritus Professor of Tropical Medicine in The Tulane University of Louisiana, New Orleans, Louisiana. Octavo, 349 pages, illustrated with 54 engravings and 4 colored plates. Cloth, $4.50, net. Published 1942.

A manual of laboratory methods to be employed in the study of diseases caused by protozoan organisms. These diseases are important and numerous and all of them are dependent upon laboratory methods for their accurate diagnosis. The author has had forty years of intensive work in this field and his book supplies a lack of a text detailing the methods for the diagnosis of these diseases. Many valuable procedures which have hitherto been available only in medical journals are supplied in this volume, and their interpretation given.

All methods of proved value in the diagnosis of protozoan diseases are included, and their evaluation as judged from large experience. The "Critique of Diagnostic Methods" which follows each section is of unique value. A book of great usefulness to doctors who conduct their own clinical laboratories, to public health officers and to laboratory technicians everywhere, upon whom falls the responsibility for the accurate diagnosis of protozoan diseases. Certainly every doctor in the South should have a copy.

A TEXTBOOK OF CLINICAL NEUROLOGY, by J. M. Nielsen, B. S., M. D., F. A. C. P., Associate Clinical Professor of Medicine (Neurology), University of Southern California; Senior Attending Physician (Neurology), Los Angeles County General Hospital; Attending Neurologist, Hospital of the Good Samaritan, Los Angeles; with 179 illustrations. Paul B. Hoeber, Inc., Medical Department of Harper & Brothers, New York and London. 1941. $6.50.

The author undertakes to provide all the essentials of neurology in a single volume of reasonable size. He is dogmatic that he may be brief. Chapter heads which attract especial attention are: Structures between Nerves and Spinal Cord, Syndromes of the Brain Stem, Syndromes of the Thalamus, The Epilepsies, Degenerative Diseases of the Nervous System and the Leuko-Encephalitides, Vitamins and Avitaminoses, Addiction.

The anatomy, physiology, pathology and symptomatology of the different disease conditions are so related in the presentation as to greatly simplify the teaching.

The author gives us a book based on a broad and deep knowledge of neurology and of how to teach it. He tells us what we *should,* rather than what we *may* do in diagnosis and management. An excellent text on neurology stripped of conjectures and superfluities.

PROCTOLOGY FOR THE GENERAL PRACTITIONER, By Frederick C. Smith, M. C., M.Sc. (Med.), F.A.P.S., Formerly Associate in Proctology, Graduate School of Medicine, University of Pennsylvania; Fellow, American Proctologic Society. Illustrated with 161 engravings and 5 color plates, second revised edition. *F. A. Davis Company,* Philadelphia. 1941.

The general practitioner is counseled to pay more attention to anoretal examination and treatment, and he is told how to do both these things. Very sensible is the aim to make the book "a working guide for the physician who wants to find out what is wrong with his patient and then cure him."

Ten common causes of rectal bleeding are set down and the symptoms differentiated, as are fourteen painful conditions and ten of protrusion.

Rectal, anal and perineal symptoms produced by urogenital conditions are discussed. The various malformations of the parts, the technique of examination, preoperative and postoperative treatment, anesthesia choice and technique, anal ulcer,

REDUCING NICOTINE INTAKE

HOW MUCH COOPERATION CAN YOU COUNT ON WHEN MODIFYING PATIENTS' SMOKING?

USUALLY the physician has two objectives in his program for improving a patient's smoking hygiene: 1. Reduction of the nicotine intake. 2. Assurance of his patient's full cooperation.

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FOR THE PHYSICIAN WHO WISHES TO REVIEW THE MODERN MEDICAL ASPECTS OF SMOKING

—a recent article by a noted physician. Send for a reprint from The Military Surgeon, July, 1941. Camel Cigarettes, Medical Relations Division, 1 Pershing Square, New York City.

**J. A. M. A., 93:1110, Oct. 12, 1929*
Bruckner, Die Biochemie des Tabaks, 1936
***The Military Surgeon, Vol. 89, No. 1, p. 7, July, 1941*

CAMEL

THE CIGARETTE OF COSTLIER TOBACCOS

cryptitis ,palpillitis, hemorrhoids, prolapse, pruritus, abscesses and fistulae, stricture, proctitis, colitis, anorectal tuberculosis, venereal diseases of anus and rectum, cysts, dermoids, teratomas, parasites, constipation, benign and malignant growths, injuries and special treatment suggestions—all these matters are discussed in an especially helpful way .

Every general practitioner should have a copy—and work up pay prectice from its teaching.

HOUSING FOR HEALTH: Papers Presented Under the Auspices of The Committee on the Hygiene of Housing of the American Public Health Association. The Science Press Printing Company, Lancaster, Penn. 1941. $1.00.

The provision of decent living quarters for the poor at rents they can pay is given as the only answer to the housing problem, and this is a part of public health work.

There are chapters on Enforcement and Subsidy in Doing Away with Slums; An Experiment in Survey and Inspection Procedures for Health Departments; Housing Codes; Heating, Lighting and Noise; Low-Cost Homes; Recreation; Family Life as the Basis for Home Planning; Social Efforts of Good Housing.

These subjects are well discussed. Their very names give a fair idea of the intent of the teaching.

EVERYDAY NURSING FOR THE EVERYDAY HOME. by ELINOR E. NORLIN, R.N., Teacher of Hygiene and Home Nursing, Julia Richman High School, New York City, and BESSIE M. DONALDSON, R.N., Teacher of Hygiene and Home Nursing, Bay Ridge High School, Brooklyn; illustrations by MARY SIMS. *The Macmillan Company*, New York City. 1942. $2.50.

The title is arresting. It is pointed out that more nursing for health would obviate the need for much of the nursing for illness. Striking chapters there are on: What the Home Should Know about its Nursing Responsibilities, Nursing for Maintaining Health, Keeping a Baby Well and Happy, First Schooling, Needs and Desires of the Teen Age, Honor thy Father and thy Mother, A Place for the Aged Person in his own Home, Forestalling Illness and Accident.

The latter half of the book, devoted to nursing in sickness, has chapters on: Making a Home Room into a Sickroom, The Home Bed for the Sick Person, Everyday Care of the Patient, Commonly Used Remedies, Feeding the Patient, The Convalescence, Meeting Emergencies.

To anyone who chooses to think rather than repeat the pat nonsense that passes current, it is obvious that most illnesses must be cared for in the home and the nursing done by mother, sister, aunt, grandma or neighbor.

Apparatus for procedures described by R. N. Blatherwick, Ph.D., on Pages 86-88, this issue—

FOR

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Accurate, rapid and simplified protein determination in urine, also spinal fluid and blood serum.

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The

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Here's a book which accepts this as fact, doesn't deplore it, and supplies practical information on how it may best be done. A copy should be in every home—and used.

DISEASES OF METABOLISM: Edited by GARFIELD G. DUNCAN, M.D., Chief of Medical Service "B," Pennsylvania Hospital; Associate Professor of Medicine, Jefferson Medical College; Philadelphia, Pennsylvania. 985 pages with 158 illustrations including 1 plate in color. *W. B. Saunders Company,* Philadelphia and London. 1942. Price $12.00.

First carbohydrate, protein, lipid—and mineral metabolism are set forth. Then a chapter on water balance in health and disease, then one on nutritional and metabolic aspects of blood disorders. Undernutrition, obesity, vitamins and avitaminoses, glycogen disease, gout, hyperinsulinism, diabetes insipidus and mellitus, and mellituria are subjects having at least a chapter each; and an appendix carries a number of useful tables.

A study of this book by doctors and application of its knowledge in practice would go far to doing away with a horde of "diet specialists" and "health foods."

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OBSTETRICS

WHITHER AMERICAN OBSTETRICS?

Few of us would have thought the hazard of bearing an excess of children so great as this high authority[1] shows it to be. This article is abstracted because of this important teaching, and to show that the Professor of Obstetrics in Johns Hopkins University—far from agreeing with certain "Specialists in Gynecology and Obstetrics," hardly dry behind the ears, that all obstetrics should be done by such specialists and in hospitals—favors the practice of obstetrics by the general practitioner, he regarding obstetrics in the same light as other types of practice, to be done by himself ordinarily and getting the help of a well qualified specialist when confronted by major complications.

In an analysis of over 45,000 consecutive deliveries, we have found that women who have borne eight or more children experience three times the maternal mortality in subsequent pregnancies, and tice the stillbirth mortality met by women who have borne fewer children. The causes of death constitute a well-defined group of conditions, basically brought about by reproductive senility. In view of the great hazards faced by these women in childbearing and the value they have to their large families, we are recommending sterilization in all women who have had eight or more children. This is usually done under local anesthesia, early in the puerperium.

From the use of pituitary extract in excessive doses, or in obstructed labors, many tragic accidents have resulted. I long held to the orthodox viewpoint, objecting to the employment of pituitary extract during the first and second stages, particularly by the intramuscular route. With the reservations that the *initial* dose should *never* exceed *1 minim,* that the *maximal* single dose should be *2 minims,* and that the utmost care should be used in avoiding its administration in obstructed labor. We have now employed this program in uterine inertia for two years and have reduced our incidence of difficult mid-forceps operations from 10 or 12 a year to one or two; the need for Duhrssen's incisions have diminished proportionately; and there have been no untoward results.

In the last quarter of a century the incidence of cesarean section in the lying-in hospitals of this country has increased five-fold, the frequency of elective low-forceps operations has shown an even steeper rise, whereas analgesia to the point of amnesia is almost routine in most large centers. Fewer mothers die, fewer babies die, and fewer women are left scarred, either physically or mentally, as the result of the process.

The type of obstetrics discussed is that practiced by the man who has had long years of training in operative obstetrics and has an even keener eye for contraindications than for indications. Among the cases referred to The Johns Hopkins Hospital after unsuccessful attempts with forceps by outside physicians, the majority show on admission a cervix that is less than eight centimeters dilated. I am certain that the man who is devoting but a fraction of his time to obstetrics will do far more harm than good by indulging in the artifices which the specialist is using; only in expert hands and in a well-equipped maternity ward can Art improve upon Nature, and then only when seasoned judgment is used.

Two types of obstetric practice are likely to be evolved, one followed by the specialist and the other by the general practitioner. I can see no other solution; and perhaps such an arrangement might prove advantageous. Under such circumstances, the general practitioner might regard obstetric surgery in the same light that he views other types of major surgery, and realize more fully than he does now the need for consultation in the major complications of pregnancy and labor.

1. N. J. Eastman, Baltimore, in *The Diplomate,* Nov.

BIOTOSE PLACED ON MARKET BY CIBA

A New Balanced Fortified B Complex Capsule

Ciba Pharmaceutical Products, Inc., of Summit, New Jersey, took the daily requirements for the B Complex as decided by the Food and Nutrition Committee of the National Research Council as a criterion for their new product, BIOTOSE. Each capsule contains thiamin hydrochloride 0.3 mg., riboflavin 0.425 mg., nicotinic acid 3.0 mg., pyridoxine 0.1 mg., ascorbic acid 12.0 mg., phytine 0.1 gm., pantothenic acid 0.28 mg., and liver extract (20:1) 0.5 gm.

This, they claim, will give all the water-soluble vitamins in the same ratio as is required by the body. Vitamin C, phytine and liver extract have been added to fortify the known factors of the B Complex. Ciba does not claim any anti pernicious-anemia effect for the liver extract as it is crude as compared with that used in the treatment of this form of anemia. It is added purely to fortify the B Complex and is known to contain many factors not as yet isolated and identified, but which are necessary for normal nutrition. Phytine, the calcium magnesium salt of inositol hexaphosphoric acid, contains three elements necessary for the activity and integrity of the nervous system, calcium, phosphorous and magnesium, and the inositol portion is an important water-soluble component of the vitamin B Complex.

Ciba believes that Biotose fits in with the generally accepted idea of a nutritional tonic, that many of the complaints of patients are due to vitamin B Complex deficiency. Symptoms caused by deficiencies of the B Complex constitute our greatest medical problem in the vitamin field.

A detailed booklet is available to those who want further information on this balanced combination of water-soluble vitamins, phytine and liver extract.

MEAT-BORNE TYPHOID OUTBREAK

(P. H. Duff, Crossville, & A. E. Hardison, Nashville, in *Sou. Med. Jl.*, Feb.)

An outbreak of seven cases of typhoid fever occurred in Cumberland County, Tennessee. Six of the cases involving five separate households gave histories of having eaten souse meat from the same batch during a possible incubation period. The bacilli of typhoid were isolated from the souse three months following its preparation. The individual who made the souse was found to be a typhoid carrier.

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VISIT THE NEW HALF MILLION DOLLAR extention to Westchester Square Hospital, Seddon Street and St. Raymond Avenue, Bronx, N. Y. This hospital was founded by Dr. E. John Dolan, President of the Association of Private Hospitals. In line with the Government's program for Civilian Defense, a special unit will be formed to serve the vicinity in the event of an air raid. The capacity of the hospital, which is privately owned, is 160 beds and 60 basinets.

ARRANGE FOR A TOUR OF RADIO CITY, ROCKEFELLER PLAZA. A city within a city. Its amusements are: Radio City Music Hall, the world's greatest theatre, seating 6,200 people, entertains an audience of more than 6,000,000 persons yearly; The Center Theatre, America's only Ice Theatre; Rainbow room and Rainbow Grill which provides unsurpassed dance music, food and entertainment; NBC Studio and Television tours conducted by NBC (National Broadcasting Company) guides.

FOR A RELAXATION HOUR, call at the SYLVAN BATHS,, the only institution in the United States which offers the "STRANGER" Galvanic Medicated (Hydro-Cataphoretic) Bath in Medicine. Operating under strict medical supervision, these baths offer beneficial effects in arthritis and allied disturbances. The Institution occupies two floors in the Manufacturer's Trust Company building at 1819 Broadway. Professional courtesy for visiting physicians.

TAKE THE CHILDREN TO THE GILBERT HALL OF SCIENCE 5th Avenue and 25th Street. A national exhibit of GILBERT educational toys. Holds one of the largest railroad exhibits in motion. Presents the ever popular Erector. Many models are hooked up for action. There are many recessed scientific exhibits operated at the touch of a button. A rendezvous for the hobbyist.

BE SURE TO INSPECT THE Occupational Therapy department of the Hospital for Ruptured and Crippled, 321 East 42nd Street. Many convalescent patients are speeded on to recovery through the use of simple mechanical devices, such as hand-loom weaving machines manufactured for the special use of children as well as grown ups.

BY ALL MEANS DO NOT MISS seeing the permanent collection of conservative art by Americans at the National Academy of Design, now installed in its new home at 1083 Fifth Avenue. You will find a noteworthy collection of paintings, sculpture and prints representing membership of the Academy starting with Samuel F. B. Morse.

SPEND AN EVENING aat the Plymouth Theatre, 236 West 45th Street and see "Solitaire" featuring the young 12-year-old actress, Pat Hitchcock, daughter of the British film director, Alfred Hitchcock. It is a delicate little story written by John van Druten from the novel by Edwin Corle. It is all about a little girl, the daughter of a bank president, who becomes attached to a philosophical tramp, causing some uneasy moments but all ends well. Exceptionally fine acting.

AND WISH TO ATTEND A MEDICAL LECTURE, visit the Squibb Auditorium located in the Squibb Building, 745 Fifth Avenue. Each evening, with the possible exception of Saturday and Sunday, the facilities of the auditorium are engaged by various medical societies of Greater New York. Papers are read, lectures are given and discussion is had on many subjects pertaining to medicine.

MISREPRESENTATIONS AS TO HEALTH IN INSURANCE POLICIES

(Leon Wasserman, New York, in *N. Y. Physician*, Jan.)

IN A DEATH CLAIM, the period of incontestability or the time limitation during which the company can interpose such a defense or any defense is during the two years after the issuance of the policy.

However, as to disability and double indemnity provisions, if the policy contains such a provision (and they generally do) the company can raise the question of misrepresentations at any time in defense to an action for disability or accident benefits.

The application can be used by the company only if it is attached to the policy, and they cannot rely upon any misrepresentations not contained within the body of the policy. Generally, knowledge by the broker or even the examining doctor for the insurance company of the misrepresentations is not knowledge by the company, and the insured is bound by the application which he signed. The company need not show an intent to defraud, it being sufficient if the answers in fact were false. The company before it can avail itself of the defense of misrepresentation, must tender to the insured all premiums paid on the policy.

Upon death or disability, the company forwards various forms to be completed by the claimant and his physicians. In view of the fact that the policies in general merely provide for receipt of due proof of death or due proof of disability, legally the company is not entitled to all the information it requests. Sufficient is proof of the fact of death or the fact of disability. Obviously, it is more difficult to define what due proof of disability is than due proof of death.

When the insured elects to complete the questionnaire submitted by the company, the attending physician should use the utmost care in completing these forms and when in doubt as to certain facts to so state. The purpose of these questions asked the physician is to elicit sufficient information or to obtain clues to possible misrepresentations as to health and age.

Particular care should be exercised in the completion of the disability forms. Often when there is no misrepresentation, careless answers by the physician will imply misrepresentation.

At the trial, the doctor is the company's witness. All consultations, treatments and diagnoses are privileged except the dates and places of treatment and consultation, and after properly objected to, the physician cannot testify to same. However, a recent statute enacted provides that if the insured prevents full disclosure by the physician such misrepresentation shall be presumed to have been material.

Misrepresentation sufficient to avoid payment by the company must be *material*.

The company has the burden of proving that had it known of these misrepresentations, it *would not* have issued the policy. It is not sufficient for the company to show that *might not* have issued the policy.

MILK A HUMAN POISON

(M. T. Davidson, Birmingham, in *Sou. Med. Jl.*, Feb.)

In my experience of 20 years in treating allergy, milk has always been one of my most frequent reactors on skin testing, only house dust exceeding it in frequency.

For two or three decades we in America have been under the pressure of an intensive drive for ever-increasing consumption of milk.

Through my office in these 20 years has passed a stream of wheezy, itchy persons, many with chronic, recurring headaches and others with various gastrointestinal complaints. Many of these persons have spent years trying to improve their health by ever-increasing consumption of milk, only to find that milk is the chief or one of the chief causes of their ill health.

More symptoms more milk, more milk more symptoms. The glaring coincidence of the increase of milk consumption and the increase of allergic manifestations cannot be overlooked.

Many of our dietitians are not really dietitians, but milk-drinking enthusiasts. Many physicians feel that milk has some occult quality which cannot be substituted. The fish liver oils are much richer in vitamins A and D than is milk. Halibut liver is a very frequent reactor on skin tests, but cod liver oil rarely reacts. I prescribe cod liver oil and calcium gluconate for many patients.

In 120 cases major roles in the production of symptoms were played by less than a dozen allergens. Chocolate, pepper, mustard are frequent reactors, but are rarely major factors.

Four foods blamed for producing allergic symptoms in the order of frequency were milk 40%, egg 27%, wheat (grains) 8%, and cottonseed oil 6% in patients above the age of infancy and somewhat larger percentages for the same foods in the younger group.

In any allergic syndrome of perennial occurrence there is a 40% or better chance that milk plays a leading role in producing the symptoms.

HOW THE DOCTOR DISCOVERS TUBERCULOSIS

1. The history—the high spots only.
2. Tuberculin test. It won't hurt you, just a pinprick—but a raised red spot means you have met the enemy sometime.
3. Physical examination. "Breathe out! Cough!" the doctor says, and he listens. He may find a spot.
4. X-ray examination. Here the film will tell the story, for certain kinds of spots mean tuberculosis.
5. The sputum examination for the tuberculosis germs.

No examination for tuberculosis is complete without taking an x-ray picture. Seldom are there signs and symptoms when the disease begins. People who look well and have no symptoms may have tuberculosis. For early diagnosis you need a good doctor, plus an x-ray examination.—*NTA Clip Sheet.*

THE ABNORMAL MENTAL REACTIONS OF OLD AGE

(G. W. Robinson, Jr., Kansas City, in *Jl. Mo. Soate Med. Assn.*, Feb.)

The many problems of the aging and old age are primarily medical and can be solved properly only when medicine has assumed its leadership in this problem and has pointed out the road to follow.

Contrary to the usual assumption, the abnormal mental reactions of old age do not all result from pathologic changes in the brain and are not all irreversible.

A constructive, optimistic diagnostic and therapeutic approach will correct the majority of the mental abnormalities seen in people over 60—the arteriosclerotic age.

THE TREATMENT OF MYASTHENIA GRAVIS BY REMOVAL OF THE THYMUS GLAND

(A. Blalock, et al, Baltimore, in *Jl. A. M. A., Nov.* 1st)

In this preliminary report of the effects of total thymectomy on the course of myasthenia gravis, the early results are encouraging and suggest strongly that the thymus gland is concerned in some manner in the genesis of myasthenia gravis. The observations indicate that the thymus gland has an internal secretion and that it may have a definite function.

One month after this report was completed the course of the first three patients continued satisfactory, with progressive improvement of strength, and no prostigmine or other therapy. The improvement of patients 5 and 6 is less striking.

CHUCKLES

The eleven ages of man can be expressed in menu form as follows:

1. Milk.
2. Milk and bread..
3. Milk, bread, eggs and spinach.
4. Oatmeal, bread and butter, green apples and all-day suckers.
5. Ice cream soda and hot dogs.
6. Minute steak, fried potatoes, coffee and apple pie.
7. Bouillon, roast duck, scalloped potatoes, creamed broccoli, fruit salad, divinity fudge and demi-tasse.
8. Pâté de foie gras, wiener schnitzel, potatoes Parisienne, egg plant a l'opera, demi-tasse and Roquefort cheese.
9. Two soft-boiled eggs, toast and milk.
10. Crackers and milk.
11.. Milk.

Patient: "Doctor, I am worried and afraid. This is my fifth operation."

Doctor: "Your fifth? What are you worrying about? It is my first."

"Everyone has some secret sorrow," says a philosophizing friend. "Even the fattest and jolliest of us has a skeleton in his midst."

Doctor: "H-mm. You certainly have acute tonsillitis."

Silly young thing: "Oh, Doctor, you flatter me."

An evangelist was exhorting his hearers to flee the wrath to come.

"I warn you," he thundered, "that there will be weeping, and wailing, and gnashing of teeth."

At this point an old lady in the gallery stood up.

"Sir," she shouted, "I have no teeth." '

"Madam," roared the evangelist, "teeth will be provided."

"Doctor," said the patient, "I'm bothered with a curious pain. When I bend forward, stretch out my arms, and make a semi-circular movement with them I feel a sharp stab in my left shoulder."

"But," said the doctor, amazed, "why on earth make such motions?"

The patient looked at him carefully.

"Well, doctor," he said, "if you know any other way for a man to get in his overcoat, I wish you'd tell me.

Said an excited citizen to a candidate,

"I wouldn't vote for you if you were the Angel Gabriel."

To which the politician replied: "If I were the Angel Gabriel, you wouldn't even be in my precinct."

Teacher: "Who was Anne Boleyn?"

Boy: "Anne Boleyn was a flatiron."

"How dare you make such a frivolous answer?"

"Well, that's what it says in the book."

"What book?"

"Our textbook."

"Nonsense, show it to me."

The boy brought up his book and pointed to the sentence: "Henry VIII pressed his suit with Anne Boleyn."

Neighbor: "Is this your ball, Tommy?"

Tommy: "Any windows or anything broken?"

Neighbor: "No."

Tommy. "Thanks. It's mine."

Mistress—Why are you cleaning the inside of the window but not the outside?

Maid—Please, mum, so that you can look out, but the people outside can't see in!

Student (to professor of materia medica): "What's this you wrote on my paper?"

Professor: "I told you to write plainer."

At the reunion dinner:

"I've lost my pocketbook with $600 in it. To the man who finds it, I will give $50."

Voice from the floor: "I'll give $75."

"So you want a divorce? What's your complaint?"

"Dat woman she just talk, talk, night an' day. Ah just can't get mah rest an' she driving me crazy."

"And what does she talk about?"

"She doan say."

"Couldn't your doctor do anything for your deafness?"

"Yes, the doctor told me to quit drinkin' so much."

"Did that help you?"

"Yes. I quit drinkin' and got so I could hear anything."

"Then how do you happen to be deaf again?"

"I liked what I was drinkin' so much better than what I was hearin'."

The doctor had three children, the prettiest little girls anywhere.

While out walking one day, they passed two small boys: one of the village, the other a visitor.

The visitor asked, "Who are those little girls?"

"They're the doctor's children," replied the village boy. "He always keep the best for himself."

Newspaper Contributor (in letter)—I am a speedy worker. I finished the enclosed article in an hour and thought nothing of it.

Editor (replying)—I got through your article in a fraction of that time and thought the same.

Laboratory procedures are sometimes necessary.—*Unger.*

Allergy.—In most cases the history, symptoms and physical findings lead to the correct diagnosis.

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JAMES M. NORTHINGTON, M.D., Editor

VOL. CIV CHARLOTTE, N. C. MARCH, 1942 No. 3

President's Address*

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

Can't Quit

Addison G. Brenizer, M.D., Charlotte, North Carolina

Does the road lead up hill all the way?
Yes, to the very end,
Will the journey take the whole long day?
From morn till night, my friend.
— *Christiana Rossetti*

CAN YOU quit or retire from a fascinating profession like medicine and surgery and remain contented with your lot? Can you quit a work in life, which you have prepared yourself for over a long period of time and for which you have striven to the point of getting yourself in an inextricable tangle? Can you substitute this interest with any other and do you know anything else to substitute it with? Added to this is the occupation itself and the activity.

Most doctors, who have succeeded in their profession have gained their success by the exclusion of almost all other allurements; they are one-groove men usually by intent and feel that when they have allowed themselves outside diversions at the sacrifice of their studies, then they have actually neglected themselves. They have even not done at times what they wanted to do, but mostly what others have made them do. They remain at the beck and call of everybody from the most "onery" negro in their town to the needful, grateful patient.

They are individuals, yes, but at the same time voluntary slaves of the public who call them and use them when they will. They are actually servants of the rich, of whom they are afraid,—afraid not to respond to their call, and afraid to charge them adequately for their services lest they offend them.

Follow the doctor and the doctor-mind through his youth and training and see a dual makeup develop within him, as doctor and man. See him, with his knowledge of anatomy and physiology and, particularly, bacteriology, striving with his youth. One wonders if there be not something queer in his makeup which determined the choice of his profession, or whether he has not become somewhat unusual through the association with the sick man's psychology. Even we doctors, ourselves, suspect the neurologists and psychiatrists, and have seen some of them become entangled in their own nets.

Again look at the doctor, even in his own home town, as citizen, as a speaker; see him in society and at home in the role of a social being, as husband, father and homemaker, contending ill-prepared as he is with business-man and lawyer, as a soldier at war. Analyze his reactions to these various situations, and you will find him, on account

*To the 44th Annual Meeting held at Greenville, S. C., February 23rd-24th, 1942.

of his centered attention on his own work, not a particularly good citizen or business-man, or social being, or even head of the home. He may be head of the home, it is true, but not the neck. That particular section of his anatomy, which holds up the head, turns it and bows it in more or less gentle assent, is liberally left to the wife.

As citizen and civic-club member he is unreliable on account of pressure of his own work and unavoidable delays in timing his operations. He is, of a necessity, late at appointments.

As a business-man he does not know what it is all about. His long training under the support of his father has kept him aloof from the money markets. The demands of the income tax, it is true, have forced upon him some sort of account-keeping, barely accurate enough to make out his income report. He wonders why so ominous a time as the Ides of March was ever chosen as the reckoning time. He recalls that Julius Caesar was once warned to beware the Ides of March, that Brutus would pierce his royal hide. As Brutus added his to the many dagger thrusts, Caesar is supposed to have exclaimed: "And thou O Brutus"! I think he might more appropriately have said: "It is well, O Brutus! I'd rather be struck by you than by the income agent." The doctor's dealings with the stock market are usually unsuccessful and about all he ever gains is not remunerative, but anatomical. He finds out for the first time what the navel is for. Judging by the way the traders buckle and bend under the impact of a breaking market, he concludes that the navel was intended for a chin rest.

The doctor as a social being mixed in with the laity has a few advantages in the way of excuses for tardiness, absent-mindedness, fatigue and boredom. His wife excuses him to the hostess, by telling that he was detained by an urgent case. It is frequently true that the doctor must pass rapidly from one scene to another, a scene of worry and distress, a tragedy in the operating room, to a scene where he should make himself attentive and entertaining to his lay partner. He should be able to fix his mind on what is going on about him, pay equal attention to Mrs. Jones and Mrs. Smith, keep his elbows off the table, his spoon out of his cup, not exclaim when the covers of the dishes are raised, and be all that etiquette demands of an ordinary social being. He should be able to do all this, if for no other reason than to come up to the social standard of behavior desired and pointed out to him by his wife. If he does not so conform and behave it is a reflection on his wife, because everybody will know that she has not made as nice a boy out of him as she might have done.

However beautifully the table may be arranged and the dishes served, every single course, from soup to nuts, may be suggestive to the doctor of something that has to do with his work. The uneviscerated oyster he knows still has his internal decorations within him and he suspects that the oyster did not decently go to the bathroom that morning; the broth is the same as one of his culture media for growing germs; meat to him is muscle fiber, fascia and fat; he knows of the therapeutic effect of liver, but when will he strike a metatasis? sweetbreads and the rest of the glandular variety simply can't be swallowed; the uncooked salads and berries might carry an ameba, the nuts or raisins a worm. Of course you would not expect him to eat okra. Even the ice cream may have developed a tyrotoxin and, finally, what the bacillus coli is going to do with all this mess is horrible to consider. Oh, what a meal if he had not been a doctor!

As churchman and officer in the church, he also lags. He hesitates to stand at the door to receive strangers, lest it appear that he is soliciting a following. He can't sing, he can only hold the hymn book and hum. He can't pray in public without preparing the prayer, and if he prayed this ready-made prayer, he would be conscious all the time that he was reciting what he had learned by heart to the audience rather than to the Lord. He has learned, long ago, not to take his alophen pills on Saturday night and run the chance of his bowels growling in church the next morning. If ever those intestines, in their play of rolling along those pills, should sound out a borborygmus, then take my advice and turn and look hard at the beautiful blonde sitting next to you, put it all over her, and show your disapproval of her, that her mother had not taught her to control her peristalsis. One simply cannot give such an exhibition in a Presbyterian audience, and hope to retain his membership.

The doctor also has his confessional, his chair in his inner office, his sanctum sanctorum, the place for the strictly private. He has heard confessions which, for shame, would never have been told the preacher. He has seen the terminal results of misbehavior and sin. He has heard fearful and nervous voices come from that chair telling of debauch, drunkenness and cruelty, of marital troubles and divorce, and has wondered whether remorse and repentance of sin or fear prompted them. He has heard stories that startled him and made him wonder if Sodom and Gomorrah really knew all the tricks. After these confessions, the doctor must conclude: "Were it not for the grace of God I might have been any one of them."

"Thou knowest not how little worthy of
My love thou art.
Whom wilt thou find to love ignoble thee,
Save Me, save only Me?
All that which I took from thee I did but take
Not for thy harms,
But just that thou might'st seek it in My arms.
All that which thy chid's mistake,
Fancies as lost, I have stored for thee at home:
Rise, clasp my hand and come!"

—FRANCIS THOMPSON

The doctor is saturated with a certain taint and must bear, at least, a mild disparagement, even from children. The children in my neighborhood said to my children: Your old daddy ain't no good, he don't do nothin', he don't even stay at home after he gets there, an' more'n this, he smells bad; he smells like a hospital. As chagrining as this slur may be and coming from truthful children, still the doctor must tolerate it. If you would have good advice about yourself, with full valuation of the truth, go not to your contemporaries, but rather to children and old women. We have to carry this taint all our lives, and when we die, if we are to be preserved until all the relatives arrive to see exhibit A, then we must be infused with it and smell again!

And let us not lay too much stress upon this post-mortem preservation of ourselves. This smell of carbolic acid and formalin might cause a few bugs and worms in the soil to turn up their noses, but we know that our intestinal bacteria, boring from within, will consume us quite. Why even shave us?, that we may look more natural? We also know that the body does not at once die all over, that the hair and nails grow on after death. And forbid the idle comment: "Don't he look natural," for if ever during life we looked like we had just fallen out of the hearse, forgive us friends this lack of personal observation on our part and our inflicting such a spectre upon you.

Why this futility, this deception? Why go through this show—though preserve you, they might, for a little while? Why not actually hasten the decay of this dead and useless mass and allow it to serve its one and only purpose now, that the flowers may grow more luxuriantly above it. Why further disturb and harass the feelings of those left behind, arouse their emotions and force them through the ordeal of barbaric rites of the funeral service, while this foul and worthless flesh might be carried away to some secluded spot, or better still, be burned and the ashes scattered to the winds? Let those left behind receive the comfort of a silent prayer. And why mark the grave? If, during all his life, he has not left his impress in the memory of those still carrying on, leave no marker as a mocking reminder that he has failed to do this very thing!

Do not indulge the sham of some trite epitaph: "Not dead but sleepeth." What there was of personality, of a soul, went out with the expiring breath and what remains is naught but clay. Where that soul went I cannot demonstrate, but I am convinced it went to God. And for every one, there is some other one, somewhere, who will hold his personality affectionately stamped in memory. There comes to mind the story of the negro killed at the dance-hall and this epitaph was carved on his tombstone: "He fought a good fight, but his razor was dull!"

Unfortunately for me, I have seen a good many persons die, and Death has always worked havoc with my feelings. I have seen disturbed and excited deaths, in thyro-to emia, when they die hot and not cold, with the protruding eyes still staring at you, reproachfully. And those who were calm, so exhausted that they paid no heed to their surroundings. Never have I seen any evidence of a linking of this life with the life beyond, but in the delirium of the patient, quite the contrary. Yet I believe and "Lord, help thou mine unbelief."

As for me, there is no such thing as humanity, ethical behavior, refined love of and compassion for wife, children and fellowman, without the Christian religion. The large majority of life would, otherwise, be cruel, shrunken, loathesome; a debauch, delirious, drunken. And I would take the easy escape from it all—and how easy the doctor could do it. An intravenous injection of a tremendous dose of morphine—and the syringe would not have to be sterile—a pulling-down of the shade on the flowers in the spring, a benumbing of self to the affection of wife, a deafening to the laughter of children and a soothing sleep, as Death came creeping on, and without apparent cowardice or compromise. His brother doctor would spare him the look at his pupils and would merely pronounce: What a glorious exodus! His fleshy pump failed him in his sleep!

Compared with the status of the business-man, the lawyer and even the preacher, the doctor should be satisfied with his record. He has been successful in ninety-nine of his cases, unsuccessful in only one. But that only one, that is the one that lays heavy on his mind and disturbs his sleep. After watching that patient all day long and into the night, he goes home to rest and sleep, but in his apprehension, can he sleep? He wonders if the nurse is watching the patient carefully and if she can interpret untoward symptoms. He calls the nurse, but still he cannot be satisfied. Sleep! "Sleep is no servant of the will, when most persued, 'tis quickly gone." He cannot get his sleep

until he has gotten up, dressed and gone back to the hospital to satisfy himself. He returns home to make his fervent prayer:

"Two things I ask thee, Lord:
Labor, and sleep.
Oh let the one be hard,
The other deep.
Give me a stubborn soil,
Rock-strewn and wet,
And make me drunk with toil,
Till I forget.

Once rapture I desired;
Now all I ask
The slumber of the tired,
And then the task:
Toil till I cannot think,
I ask no less.
Then, Heaven, let me drink
Unconsciousness."

—DOUGLAS MALLOCK

How can the doctor, who at the very citadel of life must recognize the hand of God and at death, the flight of the soul, be any other than deeply religious?

Nor can I understand Hans Zinsser when his days were numbered who telling us so beautifully about himself in his autobiography under the title: "As I Remember Him." Zinsser was a brilliant pathologist and bacteriologist, professor at Harvard Medical School. He had a discriminating mind, one imbued with wit and humor and at the same time with a pathetic strain. Agnosticism so pervaded his thought that he could not recognize the soul of the man, nor see through all his creatures the hand of God. He could not apply the one divine gift of reasoning, possessed by man and no other animal, to the story of Christ and recognize through reasoning alone, that this man must have lived the God-like life and was not fabricated by the Pharisee and Sadducee of his day in the sorry province of Judea, who entangled in their own rituals and pretense could not understand the Man nor His words. If He had been their conception, then they would have had to possess attributes like unto those of the Master. Surely, he did live; and if he lived the perfect life, as no mere man has ever done before or since, fulfilling every prophecy of the Old Testament, surely then he must of necessity be the Christ, the Savior of the world. The heathen, Pilate, ashamed of his deed and making no report of it to Rome, tried to wash away the guilt from his hands, by saying: "I find no guilt in this man." Even the Jew will accept the fact that this man lived, and proudly claim Him as a member of his race; yet, in spite of all prophecy in his Testament, especially that of Isaiah, will not accept him as his Emmanuel, although he has filled every requirement of the son of God. The Jew stubbornly goes on looking for another Messiah to come. Surely this is a stiff-necked people!

Although Hans Zinsser could not recognize God and Christ, he was able to write a beautiful sonnet on Death, perhaps interlined with an inherent belief that argument could not satisfy:

"Now is Death merciful; He calls me hence
Gently, with a friendly soothing of my fears
Of ugly age and feeble impotence,
And cruel disentegration of slow years.

He does not leap upon me unaware
Like some wild beast that hungers for its prey,
But gives me kindly warning to prepare,
Before I go, to kiss your tears away.

How sweet the summer! And the autumn shone
Late warmth within our hearts as in the sky,
Ripening rich harvest that our love had sown.
How good that 'ere the winter comes, I die!
Then ageless, in your heart I'll come to rest
Serene and proud, as when you loved me best."

Besides reasoning there is another one of God's gracious gifts to man, a sense of humor. It is likely not acquired, but given him. Given the power of reasoning and a sense of humor, man is doubly armed and buoyed, especially during times of depression and when his spirits would sink low. Without a sense of humor, if one had to go through this drab life and finally end in Hell and were made to sit there, squatting on the coals, it would be Hell indeed. His situation would be like to that of the howling dog in the corner of the fence, when the negro was asked: ""What's the matter with that dog? why is he howling so"? The negro replied: "He's settin' on cuckle burs." "Well, why doesn't he get off"? " 'Cause he's got hookworm and he's too lazy to move!"

While we admit that a sense of humor is one of the gracious gifts to man, it is also dangerous when applied to patients who want themselves and their ailments taken so seriously.

How could the doctor miss the naiveté, the humanity of stories like these:

I once had a patient sent to me by a doctor with the diagnosis of trigeminal neuralgia. After talking to me at length and describing all her symptoms, she finally asked: "Doctor, jist what is this that I'se got?" I stretched myself to my full dignity

and said: "Why, Madame, you've got tic douloureux de Gilles de le Tourey." She forthwith rose and departed, never to return, and told the doctor who sent her to me: "No, I ain't going back to him, he used some sort a quare language on me—he must be a foreigner or a Jew or sumpin'!"

The long, slim woman who comes in buckled in the middle, pouched in her lower belly and walks in a squat, when asked what's the matter, answers: "Female trouble." "Well, there are five volumes up there on the shelf on 'female trouble;' just what variety have you?" "My doctor said my womb was growed to the backbone and he put it up, but it's done come down again."

A woman forty-six years old came in, pregnant. She was much distressed and concerned over her plight, since her last child was twenty years old. Finding her general condition good, I jovially remarked: "You have certain advantages, certainly for the child. Whatever the child amounts to in life, good or bad, he can reckon that he is unintentionally just that much, and I can give you a good name for him. You can name him after me. Just think of the opportunity. You can name him Addison Brenizer instead of Nebuchadnezzar." She indignantly sneered: "Now look here, I am worried to death and came to you as a serious doctor to do something for me, or at least give me some encouragement and sympathy, and here you go with your miserable twaddle!"

While the telephone nowadays is about as necessary as food, and we doctors would stop eating and perhaps drinking too, as much as we like it, before we would give up the phone; yet, like so many precious things, your own children for example, it can become such a nuisance that you find yourself, temporarily, about to tear it from its cords—from its sinews as it were.

One morning about four o'clock, I was awakened from a sound short sleep, which I thought I really deserved, by the ring of the damnable telephone. The voice that come over it did not sound nor smack of the upper crust of society, but decidedly of the factory district. It said: "Doc, will an Allcock's porous plaster burn ye?" I did not know what an Allcock's porous plaster was. I replied, answering the question, by asking another, in Philadelphia yankee style. (A Philadelphia yankee was once asked why he always answered one question by asking another, and his reply was: "Do we"?) "Did the plaster burn you?" She said: "It sho' did." She continued: "Doc, what would you do for a burn like that?" I have intimated that the voice did not smack of cosmetics, cold cream, lotions, pomades, permanents and Marcel waves. I inquired: "Have you got a little lard?" She answered: "Sure, I got that." "Well, spread on the burn a thin film." Voice: "Sir?" "Well, put on a layer of lard, then sprinkle on some flour and cover it with a cloth and if it doesn't work out all right, come to my office tomorrow afternoon and let me see it. Good night!" The next afternoon she came up to the office and enthusiastically exclaimed: "Doc, you know that was the best home treatment ever I saw, and you know I likes you, 'cause you'se so common." She, surely, meant this as a compliment and was trying to tell me that I was not "high hatting" her and was talking on the level to her, in her own language. Even the term "Doc" was not familiarity on her part but friendly, almost affectionate.

Another voice out of the night, par telephone, said: "Doc, you know I m more worried when I have pain, than when I don't. When I have pain, I think there's something the matter with me, and I know where it is, but when I don't have pain, I think there's something the matter with me and I don't know where it is!"

Another patient, an old woman, had allowed her goiter to grow along with the pines in the sand hills of our glorious State, and during her wait on preparation for operation I saw her observing our young ladies dressed in this sparsity of clothing and I reckoned that I had divined her thoughts. She, herself, was dressed in corset, corset-cover, three white and a yellow flannel underskirts and with top skirt sweeping the floor. I said to her: "Mrs. M———, do you think they could be right down in their hearts and souls and dress like that?" She replied: "No Lord, Doc, they jest can't be." I said: "And Mrs. M———, you don't know how fresh they can be. One of them was having a pair of shoes tried on and the saucy clerk said to her: 'Don't you roll your stockings awful low?' She answered him: 'Why, I have to, to keep the teddy bears from biting them.'" Mrs. M———vehemently remarked: "Ain't it so, Doc, they ain't nothin' they won't say or do." "Yes, Mrs. M———, I was taught that a young lady's shoes were sewed on to the ends of her skirt and all I knew was the tip of the little shoes below and the ribbon at the waistline above. Of course, I had read that evolution had ultimately filled in the intervening space, but as far as I myself actually knew, the space was still blank. And you know, Mrs. M———, that I was nearly twenty-five years old before I knew any difference." There we were, sitting close together, in this interesting conversation, she as my patient, and I as her serious doctor, whom she had chosen to cut on her precious body. She leaned way forward and put her hand on my shoulder and said: "Now, Doc, you said you were about twenty-five years old before you knowed there was anything between the shoes and

the ribbon at the waistline, and you didn't know no different, but let me ask you, jest like a confession on your deathbed: "didn't you suspicion no difference?" Perhaps, in pushing the conversation, I had gone a trifle too far!

Like most young surgeons getting back to the home-town, I was more than eager to build up a following among my own people and to get their recognition, in spite of mild disparagement of old friends and negro servants, particularly, who would condemn with: "I knew him when he was a boy." Not that there was any particular blight upon me, but they had simply known me when I was a boy. I had merely grown to maturity or rather to the voting age, in the town. I was perhaps still too near the small town, in spite of an intermittent absence of fourteen years and forsooth: "Can there any good thing come out of Nazareth?"

Now one who looks at others not too seriously, must of necessity also turn his thoughts inward and examine himself.

> "O wad some Power, the giftie gie us
> To see oursel's as ithers see us!"

I wonder if we ever do see ourselves as others see us. I wonder if we do not see in others the same faults that we ourselves possess much more markedly than they do. What an asset are such qualifying adjectives to us as polite, courteous, kindly, tactful; not, however, dignified and poiseful. Dignity is often an inadequacy, a stiffness and lack of resiliency, a fear to bend less we never rebound and straighten ourselves up again. Poise is often a good-natured contempt, it is a talking down to you, a self-satisfaction with disregard for others, but actually delivered good-naturedly, we think. Whatever the true definition of these terms may be, we must learn also to size ourselves up properly and apply the vernier scale to ourselves as we do to others. Alfred de Musset says:

> "Il faut savoir beaucoup de choses,
> Pour connaitre ce q'on aime le mieux."

Truly, one must know a great many things to recognize that which he loves the best.

I have no exact model for what I am trying to say about the doctor's sense of humor. Hertzler struck it off well in his *Horse and Buggy Doctor,* but those outside of medicine have not understood it and have taken the wrong angle on it. I would not satirize the doctor as did Moliere and Bernard Shaw, and I should like to point out a profundity in the doctor far deeper than the absurdities laughed at by Irving Cobb and Will Rogers.

I am one of them, the doctors, as much initiated and bound in their union as any one of them, and there to stay until the end. I should not laugh at them; I shall always laugh with them.

If there be a horrible example among us, let it be preferably I. I hope to finish my subject, however, and not fail in it as did the temperance lecturer, who ran out of licker for his horrible example; and then too, "I shall not try to be as funny as I can."

I am sure that a layman could never understand the gathering of doctors for consultation: At first the seriousness of the occasion, when making the diagnosis together, inevitably followed by a levity, particularly on the verge of an operation about to be performed. At that time, when all consultants may be gathered in the scrub room, tense in their emotions over the diagnosis and pending operation and having taken on themselves the worries and concerns of the family of the patient, levity, jokes and humor prevail—not that we are taking the ordeal lightly; we are simply using these means as a vent for our emotions.

In the first place, the consultation has run about like this: In the presence of the large swelling in the abdomen, the first consultant has looked at it, felt it, listened to it, and then after thoughtful meditation has committed himself thus far: "I believe it's fluid." The next consultant, after the same procedure and even deeper thought, also commits himself by saying: "I believe it's gas." Now the third consultant, specialist and expert and the pivot on which all diagnostic acumen swings, but at the same time politic, tactful and kind, after the superlative of thought and meditation, agrees in part, with the two other consultants by saying: "After due deliberation, I would say that I believe it's something between fluid and gas." Long after the consultation and following expert operation, that same abdominal protuberance, that liquid, gaseous tumor bears in remembrance of that last consultant, his very name!

Oh, the nonsense and foolish things, after the important, serious, worrying work has been done. Oh, the diverging emotions that converge again and point themselves at one common emotion. Oh, the narrow border between pathos and joy, between crying and laughter. The selfsame eyes that sparkle most can also weep the most of tears! What a life it is: Ambrosia and poison, sweetest honey and bitterest gall, made to nourish the child or kill the mother!

Who of us, who loves wit and humor, is not likewise swayed by the melodies of Stephen Foster, especially his *Beautiful Dreamer;* or are more profoundly stirred by Tschaikowsky's *None but the Lonely Heart,*

When Cyrano de Bergerac fails in all his ambitions, when he misses his desire to be killed at the point of a sword in battle and has to accept a death caused by the bludgeon of a lackey delivered in ambush and from behind, he exclaims:

"Oui, je disais cela! le destin est railler!
C'est tres bien, j'aurai tout manque, meme ma mort!"
"Que je pactise?
Jamais, jamais!—Ah te voila, toi, la Sottise!"

It is hard sometimes to dismiss the idea that destiny is a mocker. There is something appealing in de Bergerac's way of meeting this tremendous situation. Calmly he comments: I am about to miss even my death. How I compromise! Ah, but there you are, you, my nonsense!

Wilhelm Busch could write:

"So geht es immer, wie ich finde"
Sagt der Mueller, voller Zorn,
"Hat man Korn, so fehlt am Winde,
Hat man Wind, so fehlt das Korn!"

"It always goes thus, I find it,"
Said the miller, full of anger,
"If you have corn, you have no wind;
If you have wind, you have no corn."

And could recite:

"Rasch tritt der Tod den Menschen an
Es ist ihm keine Trist gegeben;
Es sturzt ihn Mitten in der Bahn;
Es reisst ihn fort vom vollen Leben.
Bereitet oder nicht, zu gehen
Er vor seinem Richter stehen."

He must stand before his Judge.
Prepared or not to go,
It tears him out from full life.
It throws him in the middle of the way
It gives him no warning
Death rushes quickly upon man,

The jovial Dr. Oliver Wendell Holmes, professor of anatomy at Harvard, when he taught the dry bones, said: "The pelvis is an arch under which all must pass, who have a right to immortality."

This same professor of anatomy, recognized before Semmelweis, the infectious and contagious origin of puerperal fever and wrote a monograph on it. He gave us the term anesthesia.

Author of *The Autocrat of the Breakfast Table*, he wrote in two moods:

"Build me more stately mansions, O my soul,
As the swift seasons roll!
Leave thy low-vaulted past!
Let each new temple, nobler than the last,
Shut thee from heaven with a dome more vast,
Till thou, at length art free,
Leaving thine outgrown shell
By life's unresting sea!"

and—

"If I could live to be, the last leaf upon the tree,
in the spring,
Let them smile as I do now, at the old forsaken
bough where I cling."

How else than with reasoning and a sense of humor could the doctor meet the various situations wherein some of his own ideals are smashed and perhaps he smashes the ideals of others. He becomes "fed up" with his work and runs away for rest and recreation, far from the hospital, the office and the telephone, the wear and tear of the responsibility for life. After the shortest period of delightful relief from responsibility and the temporary desire to retire from the world, thumbing his nose the while at most of it, he is hardly launched away before he is beset with the keenest desire to take it up again.

Twice in my surgical career, once on account of overwork during that glorious decade from the 1922's to the 1932's, and once on account of the unexpected death of a judge. I fled the country and went abroad, thinking then that I was certainly through. The first two weeks were delightful, but only the first two weeks. The next six weeks were tedious with my desire to return. Overwhelmed by work and worry, one might have the thought and feeling that he would like to quit the game, but the call to return is soon heard again and is like music in his ears or the call of the Siren or of Lorelei, that would eventually lure him to his doom.

He has still another avenue of escape, he goes to clinics and medical meetings. And if he follows all the medical societies he belongs to, he will at least see his country, from Quebec to New Orleans, from Charleston to San Francisco. He could use these occasions as vacations for recreation, alone; but he is indeed a fortunate man if he can sit through the long sessions in a smoke-laden atmosphere and resist the clink of the ice in the glass and the joviality and congeniality of other features of the meeting. One should use a good but selective memory, recalling, storing and recounting life only on the highest plane, but, unfor-

tunately my memory is like a Hoover cleaner, it scoops trash and dirt as well.

At these medical meetings and clinics, the doctor is delighted, for he sees the struggles and problems of the other man, without his own personal responsibility, not rejoicing in the failures and ill results of the other doctor but gaining encouragement from the mere fact that troubles are not all his own and that he and his colleagues are really working conscientiously for a common cause: To get the sick man well.

Though we may fool and deceive our patients and the public as to our real selves, I wonder if we ever deceive our colleagues and competitors in the profession, doctors who have had similar experiences. I wonder, however, if we always grant the competitor the friendliness, the generosity, the tolerance that all of us crave for our own selves. I wonder if we really recognize and feel with them what statistics and mortality percentages mean to the author of a scientific paper before a medical society. As read before the society his statistical papers are cold figures of so much cure and so much bad results and deaths; but do we see, behind his written pages pictures of his suffering and dying patients, his struggles with them, his sore disappointments, as well as his enthusiasm and exultation over his successes? Do we not know that he is carrying in memory every scene of his tragedies? The doctor cannot erase from his mind such scenes as these and he keeps turning back to them, though the Fates may be waiting for him just around the corner.

He has just had a beautiful little girl with cleft palate, the only child—the parents were afraid to have another—who before his operation began stopped breathing under the anesthesia. He worked with the child for an hour, knowing that she was dead but trying to think what he could say to the parents. Let it be known that parents do not love the deformed child less, but more. Life is a strange melange: the one lamed and cared for most, is most beloved. What the doctor did say abruptly: "Your child is dead at my hands, what would you care to do about it?" What the father did was to drop on his knees and pray. He rose, shook hands with the doctor and said: "It's all right!" Could any one take the comfort of Christianity from that man, could any one disturb that man's thoughts by argument! And the doctor develops a tremor at every cleft-palate operation. He is afraid.

He recalls the doctor's son with the uncontrollable bleeding from the mangled and pulped bones of his face, when the only way to staunch it was to ligate the vessel at its source in the neck. While the instruments were being prepared and the operation progressed slowly, he could see the worry and impatience of the doctor father and hear the weeping of the mother in the corridor outside. He must do his work well and by no means blunder, even though the boy is bleeding furiously.

He recalls the fourteen-year-old boy who had lost the use of his legs on account of a tumor pressing on his spinal cord and was bedridden for eighteen months. The family had given up all hope, had spent all their money on the care of him, and had seen him thus cut off and a constant burden and expense until the joy of death in this case might end his suffering. Ten weeks after removing the spinal tumor and relieving the pressure on the spinal cord, this boy walked three miles to a small town to catch a bus to return and show how well he could walk. He beamed with joy at the mere thought that life was open before him again. The result in such a case is connotative of the Biblical admonition: "Take up thy bed and walk."

I was called from one operating room to the other, where a man had brought his child, struck by an automobile. He was just one of the people, a workman. Mixed with the grease and dirt on his shirt was the child's blood; blood was on his rough, dirty hands; he was pale and could scarcely stand. The child lay pale and motionless on the table; there was a large depression in the skull, blood and brain fluid ran from her mouth and ears. She resembled my "Millie"! The world grew dim, I felt my knees give way! Was I weakening? I had stood all day and night during the war operating on the torn, the dismembered, in the stench of gas gangrene. I must steady myself and complete the operation in the other room. After such an experience, I call my wife and ask if the children are all right; she wonders why I should be anxious, and when I arrive home in the evening, I hug them a little tighter. And when my little daughter in return throws her arms around my neck and hugs with all her might, I say: "Is that all the tighter you can squeeze?—Shucks!"

How can we console the parents at the death of a child? There are a few sympathetic words to be expressed and the assurance of friendships, but the parents must return, alone, to the nursery; the little dresses must be put away, the broken toys gathered up, the high chair withdrawn from the table and the space forever be left vacant! What is more expressive of the child's whole attitude, than the shoes? The whole child can be reconstructed and mounted in them, exactly how and where they stood, the patter of the little feet in play, the quiet and easy tread when it would surprise you, the bend on tiptoe when it would stretch upward to give you a kiss!

How can we console grief at the death of a child?

I shall have and hold these things to the very end, with memories and gratitude for all I possess and a belief and hope that extends deep into the Great Beyond.

The many times I have felt that I am completely through and should like to quit! Not only this, but I feel that I should never have begun. Considering all the worry, the physical and mental wear and tear and responsibility, I certainly do hesitate even to allow my son to get into the profession of surgery. When I look at the boy in his happy and exuberant adolescence, I waver under the thought of his taking the load and mixing in his life the taint of the doctor, which taint will pervade and constantly recur in all his activities, just enough to prevent his complete happiness at any time. I should be most careful to explain to him just what he might expect.

How often would I, at the death of a patient, at an ill success, or any actual tragedy, have run away. How often, when the time for my paper before an audience was coming down on me, would I have ducked and run; or when the occurrence of the death of five patients in a row so overpowered me that I closed the door, raised the window for air, and called up my wife for her supporting and consoling word. How I have yearned for an isolated spot somewhere, where I could, far from the operating room and even the smell of the hospital, hidden from the gaze of that "out front"; and with open mouth breathe a piney and sunlit air, and dip my finger tips, instead of in blood and corruption, in clear water from some woodland stream. Oh, how I should smile and thank my good fortune as most of the world passed by.

I am also not deceiving myself as to my easy replacement, and am fully aware of how easily the narrow crack in the surface that I fill could be filled with a material, in somebody else, of far finer, smoother and nobler stuff. My hope and prayer is and will be, that, as I reach my terminus, when my fiber gives way, my life will not hang suspended, vacillating, but be merged from sleep into death, or be hurled from some tremendous height and the sanitary corps be ready to clear away the messing-up of me, to give a clean and spotless pathway for the passerbys to tread upon. Any way out, but by a long route of uselessness and care to others.

Once again our country is at war. Twenty years ago I did not think this were possible in a world we of that first World War had made "Safe for Democracy." There will be again a tremendous demand on the doctors both for military duty and civil practice. And doctors, as before, as always, will respond.

After the failure of the Versailles Treaty, Wilson's "Fourteen Points," the League of Nations, the failure to win the Peace, with the cost of our part of the war, other nations' indebtedness to us and no payment to us, stigmatized as Shylocks because we wanted a just payment, everybody loser and nobody gainer and we the cats-paws with which Europe had scratched the nuts out of the fire, I had the decided feeling that if they ever gave another war and did not invite me, I should not feel particularly slighted.

During the present war, we are fighting a Boche and Jap far more wanton, ruthless and unscrupulous than ever before. All honor and chiavlry are gone. The knifing is done now in ambush and in the back. When Knighthood was in Flower, if the opponent's sword were wrested from his hand he was allowed to pick it up before the combat was resumed. Even during World War No. 1, the adversary was allowed to regain his bayonet, aviators were treated with courtesy and honor, and the Medical Corps of the two sides continued to exchange ideas and methods; and after the war was over, a large fund was collected by American physicians to help out the impoverished doctors in Germany.

There is no better note than a paraphrase of Joseph Fort Newton's analysis of the siuation:

What has caused the present World War? Why such collective insanity with its holocaust and horror? What has happened to man, the thinker, man the moral being? Why is the race trying to destroy itself?

The forces bringing men to ruin are self-generated and not a curse of God.

Did Hitler cause the war? No indeed; there was a world war before he arrived. For his own crimes he will have to answer, but he is not a cause—he is an effect. Something was the cause of Hitler.

The war is due to disbelief in God. Not merely unbelief—a negative thing—but a defiant disbelief, a curious kind of theophobia among men.

But how did man fall into disbelief in God? Why did the most educated generation in history listen to the prophets of emptiness and futility? It was the vanity born of the triumphs of knowledge. Disbelief proved by the miracles wrought by science! Man thought himself self-sufficient; life lost its unity and meaning. If there be no moral Lawgiver, the moral law becomes fiction.

The German race, led by Hitler, has fallen back on Nietsche's Ubermensch, the superman, dealing with the survival of the fittest, the superiority of

the strong over the weak. Nietsche died in the insane asylum; Hitler, with his ideas of grandeur and persecution, is doomed to take the same route. As we men in the South see it, the disregard for the woman is particularly indicative of lack of character. Nietsche says: "When you go to the woman, don't forget the whip"; Bismarck that: "Dogs and women belong at home."

The German is the bully type, exulting in success, but not able to take ill-success and depression. He has no sense of humor to buoy him up when his spirits sink low. He has lost his God, he cannot stand prolonged physical hardship and an empty stomach. He is gutless and he is ultimately whipped.

If faith goes, only force is left. When the Roman religion decayed, men were commanded to worship the Emperor. Even Nero, one of the vilest wretches ever born, was an object of worship, as head of the State.

In place of an absolute God, with His truth, justice and mercy, we have the absolute State. Truth is what the State says it is. Finally, by inevitable logic, we have the absolute man, leader of the State.

If men reject the religion of Heaven, the only alternative is the religion of Hell—a black god of blood, of cruelty, of all evil passions!

But how rapidly our psychology changes, particularly that now our country is ruthlessly attacked and we are drawn back into war.

I, as many another of you doctors, have offered my services to the Surgeon General and we are waiting for the call to return to military duty or engage in civil practice.

We are again ready to take up a wholesale surgery, to see the young man riddled and torn by the implements of war, to stand among amputated limbs, the smell of pus and gas gangrene. Oh, the pity of it!

Life goes on, and where have you and I arrived? What have you and I done? We have not learned profoundly; we have snatched a little knowledge and experience anywhere and everywhere; we have not treated our knowledge and experience with great wisdom; we have talked, argued, made criticisms, and even jested and joked with gross inconsistency; but we have not gone very far. And we find all along the way, as we travel, a strange melange of bitter and sweet, ambrosia and poison. Did we, and do we, need to travel far and wide? Have we not come back to the beginning, arrived where we began, and begun all over again, once more tracking in a circle? The story is old and always the same. As old as the hills around Bethlehem.

The greatest of the commandments exhorts us to love God; and scarcely less strongly are we commanded to love our neighbors. How simple, yet how glorious these words. And to you who may and can care for the poor and meek and lowly, and heal the sick—all exemplified in the life of the perfect Christ: Have we no heritage to receive and give? Have we no fortune to share?

"No heritage have I of power and wealth and ease, nor fields of waving corn, low-swaying in the breeze, nor flocks nor merchant ships on fair incoming tide; my heritage is God, and I am satisfied."

"Oh, I have slipped the surly bonds of earth,
And danced the skies on laughter-silvered wings;
Sunward I've climbed and joined the tumbling mirth
Of sun-split clouds—and done a hundred things
You have not dreamed of—wheeled and soared and swung
High in the sun-lit silence. Hov'ring there,
I've chased the shouting wind along and flung
My eager craft through footless halls of air.
Up, up the long delirious, burning blue
I've topped the wind-swept heights with easy grace,
Where never lark, or even eagle, flew;
And, while with silent, lifting mind I've trod
The high untrespassed sanctity of space,
Put out my hand, and touched the face of God."

—JOHN GILLESPIE MAGEE, JR.

The Clinical Effects of a New B Complex Factor, Para-Aminobenzoic Acid, on Pigmentation and Fertility*

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THE CONCEPT of disease due to deficiency in substances required only in minute amounts is relatively new, and was brought about by the discovery of the food constituents known as vitamins. Several characteristics are now being recognized in this group of accessory factors (*Chart 1*); the *first* of these characteristics is, of course, the fact that they are necessary for health, and, indeed, even to life, and that an inadequate supply of them may result in disease. A *second* is that in general they are needed only in small amounts; in this respect, they may be classified with catalysts, enzymes or coenzymes. The *third* is that they are fundamentally related to the nutrition of many, if not all, of the cells of the body. This characteristic appears to, but does not, contradict a *fourth* characteristic, which is their specificity in relation to disease. A *fifth* characteristic is that few of them can be formed in the human body. A *sixth* characteristic of these essential accessory food factors is their lack of toxicity or potentiality for harm.

Chart 1

CHARACTERISTICS OF VITAMINS

Necessary for health and life; inadequate supply results in deficiency disease.
Needed in small amounts; biologically active as catalysts, enzymes, or coenzymes.
Fundamentally related to the nutrition of cells in the body.
Specifics in relation to disease.
Exogenous hormones.
Not toxic or potentially harmful.

The vitamin B-Complex in particular has become increasingly important in the last few years for the treatment of deficiency diseases. New factors of the B-Complex rave been isolated and synthesized. In *Chart 2* I have tabulated the various factors of the B-Complex with a mention of activity of these factors. The unknown portion of this complex may still be large, many factors of which have been isolated and described as a result of animal experimentation, but which as yet have not been synthesized and thoroughly understood. The effects of several new factors of the vitamin B-Complex were studied on normal hair pigmentation of animals. The first papers describing an anti-gray-hair factor, considered to be a member of the vitamin B-Complex—a part of the filtrate fraction which comprises pantothenic acid, the chick anti-dermatitis substance—were published in 1938 by Lunde and Kringstad[1] in Norway and by Morgan, Cook and Davison[2] in California. In April, 1940, Nielsen, Oleson and Elvehjem[3] described a crystalline material highly active in the prevention of graying of the hair and distinct from all of the recognized members of the vitamin B-Complex. In August, György and Poling[4] reported that pantothenic acid has a definitely curative effect on nutritional achromotrichia in rats. Two months later, Unna and Sampson[5] confirmed the relation between graying of the hair and dietary deficiency in pantothenic acid and emphasized the preventive and curative effect of calcium pantothenate. In November, Dimick and Lepp[6] concluded that pantothenic acid decreases graying of the fur, but that it does not completely restore hair color nor completely prevent graying. In December, Williams[7] described the inefficacy of pantothenic acid against the graying of fur, and György and Poling[8] noticed that pantothenic acid is only one,

Chart 2

VITAMIN B-COMPLEX

Thiamine	B_1	....Human Neuritis
Riboflavin	B_2 (G)	....Human Cheilosis
Pyridoxine	B_6	...Rat Dermatitis
Niacin (nicotinic acid)	P-P	....Human Pellagra
Pantothenic acid	F-	....Chick Dermatosis, Rat
Biotin	H	F....Chick Dermatitis Egg-White Injury
p-Aminobenzoic acid	B_x	....(See Chart 3)
Inositol	?	....Mouse Alopecia
Choline	?	....Hepatic Degeneration
Folic Acid	?	....Bacteria Growth

Factors which have not been synthesized:
B_3 (Pigeon wt. factor)
B_4 (Rat antiparalysis factor)
Adenylic acid
Pimelic acid (Growth factor for C. diphtheriae)
Factor U—chick cartilage
Factor W—?—metabolism or growth

*Paper given by the author at the 44th Annual Meeting of The Tri-State Medical Association at Greenville, South Carolina, on February 23d, 1942.

although probably the most important, factor in the prevention of nutritional achromotrichia as it is seen in rats and mice. In February, 1941, Ansbacher[9] reported the chromotrichial effect of para-aminobenzoic acid in rats reared on a diet relatively high in all the B-Complex vitamins including panthothenic acid; a month later, Martin and Ansbacher[10] confirmed the beneficial influence of para-aminobenzoic acid in mouse achromotrichia brought about by hydroquinone feeding. In May, Martin[11] described the complete cure of the graying of the fur of mice by a rice polish extract and subsequently Martin and Ansbacher[12] found that *p*-aminobenzoic acid is equally effective. In June, Emerson[13] reported that *p*-aminobenzoic acid is ineffective in pantothenic-acid deficiency, an observation confirmed by Unna *et al.*[14] in December, 1941, and by Henderson *et al.*[15] in January, 1942. In a recent issue of the *Journal of the American Medical Association,* an editorial[16] appeared, for which I wish to express my appreciation to the editors at this time. The work of the three independent groups of investigators cited was interpreted as proof against the chromotrichial action of *p*-aminobenzoic acid, when in reality these workers proved merely that *p*-aminobenzoic acid is inefficient in curing pantothenic-acid deficiency. The vitamin character of *p*-aminobenzoic acid was confirmed in August by Sure,[17] who found it to be contained in the vitamin Bx fraction which is necessary for lactation and reproduction. It is to be noted that the anti-gray-hair vitamin has also been named vitamin Bx by Lunde and Kringstad.[18] In September, Lampen and Peterson[19] showed that *p*-aminobenzoic acid is a growth factor for certain organisms, a characteristic of all the vitamins of the vitamin B-Complex. Soon after the start of the work referred to, I began to investigate *p*-aminobenzoic acid clinically* and reported[20] preliminary data on the beneficial effect of the new B-Complex factor in human achromotrichia.

The manner in which a B-Complex vitamin can influence pigmentation is not known, but data have already become available showing that *p*-aminobenzoic acid plays a significant role in certain enzymatic processes. It was pointed out by Martin, Wisansky and Ansbacher[21] in May and independently by Lipmann[22] in June, that it modifies the formation of melanin and has a remarkably great influence on tyrosinase activity.[23]

Para-aminobenzoic acid, the chemical formula of which is $C_7H_7O_2N_1$, is structurally 1 - amino - 4 - carboxy - benzene (*Chart 3*), has a molecular weight of 137 and a melting point of 186-7° C.

*Material for this work was generously made available by the International Vitamin Corporation, New York, which supplied "PABA," and later by Endo Products, Richmond Hill, New York, which supplied "PABANOL."

This factor of the vitamin B-Complex is apparently identical with the Bx factor referred to by some investigators. Its various actions have been tabulated in *Chart 3.* The hypothesis and proof

Chart 3

p-aminobenzoic acid

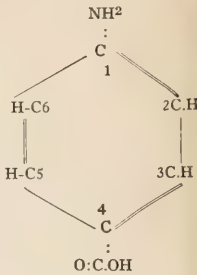
$C_7H_7O_2N_1$

? Vitamin Bx ?

1-amino-4-carboxy-benzene

Mol. wt. 137

M. pt. 186-7° C.



p-aminobenzoic Acid—Bx

- Metabolite: bacteria, molds, yeasts, fungi, plants
- Chromotrichial factor: chicks, rats, mice, minks, humans
- Lactation and fertility: rats and humans
- Anti-sulfonamide.
- Modifier of melanin formation.
- Catalyst for tyrosinase activities.
- Hormone protector: adrenaline, stilbesterol

that *p*-aminobenzoic acid is a vitamin is tabulated in *Chart 4.*

Chart 4

Is *p*-aminobenzoic acid a vitamin B-Complex factor?
It is:

1) a natural constituent of yeast, liver and cereals
2) water-soluble
3) a growth factor for bacteria
4) biologically effective in minute amounts
5) a factor the absence of which from the diet results in a deficiency disease.

With respect to nomenclature, the American Medical Association[16] employed the term "achromachia" for "loss of hair," Lachat[24] believes that "anticanitic vitamin" is more suitable than "anti-achromotrichia factor," and Bacharach[25] suggests the term "trichochromogenic" in place of "anti-gray hair" factor. It seems definitely advisable not to use the term "anti-achromotrichia activity," since it contains a double negation; the term "chromotrichial activity" appears to be more suitable.

During the past 8 months some 800 patients of both sexes varying in age from 16 to 74 years were treated with *p*-aminobenzoic acid. At first my observations were concerned essentially with the color change occurring in human hair. It was noted after 3 to 8 weeks of treatment that the gray hair was characterized by a yellowish cast which gave a dirty appearance to the hair, and in those cases in which this yellow hue was noted, a dark dusty gray color was observed which gave the hair, generally, a darker sheen. After the early yellow or dusty gray stage there was a gradual increase in the darkening, which varied considerably in time, apparently depending upon the general physiological condition of the patient. It must be mentioned that the clinical picture of achromotrichia is often complicated by a concurrent endocrine disturbance. It was my interest in these endocrine deficiencies that prompted me to study pigmentation in other parts of the body. Normal areas of pigmentation such as the nipples, mucous membranes of the mouth, vagina and anus were observed during the administration of *p*-aminobenzoic acid for the treatment of achromotrichia. I soon noticed, particularly in young girls just beyond puberty, that there was a definite darkening of the areolae mammae, the labia, and the vaginal mucous membranes.

Patients with pathological conditions in which there was a deficiency in pigmentation were then treated with the aromatic amine. It was tried in cases in which there was lack of pigmentation with alopecia areata and vitiligo. In these cases a definite return of color occurred in apigmented areas of the skin. After treatment for 5 to 20 weeks with *p*-aminobenzoic acid in doses of 100 mg. t.i.d. there was return of normal color to the skin, as well as a dirty yellow color to the white hair which had grown in the areas of apigmentation in cases of alopecia areata. In vitiligo there was a gradual return of pigmentation to the areas of skin that had lost their normal pigment. In this group of cases I was fortunate to be able to observe one that had a blanched scar over the upper abdomen due to a first-degree burn which had been caused by scalding water some 20 years before. After 3 months of treatment with *p*-aminobenzoic acid the blanched area gradually became darker, blending almost perfectly with the color of the surrounding skin. It was observed also that areas of leukoplacia of the mucous membranes of the mouth with complete loss of pigment showed a return of color as well as an apparent change in the hypertrophy of the endothelial tissue as a result of *p*-aminobenzoic acid therapy. Areas of hyperpigmentation—nevi, freckles, nevus cells—were observed in patients under treatment with the amine. Much to my amazement I observed decrease in pigmentation in these lesions. The shading of the pigment became lighter and in some cases almost completely disappeared until it blended with the normal color of the skin. In other lesions, such as the dark nevus cells, the dark brown shade gave place to pale brown or a yellow pink. Observations have been started on cases of hypo- and hyper-pigmentation of the retina, but as yet it is too early to draw any definite conclusions. There is, however, an apparent effect upon this pigment similar to that observed on cutaneous pigment. Melanoma and melanotic sarcoma have been considered, but it is far too early to pass any judgment as to results in these conditions.

Similar to this effect on pigmentation of the nipples and vaginal mucous membranes were the observations of Block and Schrafl,[26] who noted a darkening of these areas following the administration of estrogenic hormones. There are also the experimental data of Sure[17] showing increase in lactation in animals when *p*-aminobenzoic acid was administered. These observations and those that other physicians and I had made on stimulation of libido and reëstablishment of the menarche in certain cases of amenorrhea brought about by *p*-aminobenzoic acid, prompted me to find a possible explanation of a similarity in action of this vitamin and the hormones, such as estrone and estradiol.

Added comment in reference to amenorrhea may be of interest. A 28-year-old, single, diabetic woman with primary amenorrhea of 10-years duration, infantile uterus and breasts, had had endocrine treatment over the past 8 years, during which period her daily insulin requirements were substantially reduced. In 1939 inunctions of alpha-estradiol were applied to the breasts nightly; moderate parenteral doses of estrogen propionate were given. There was marked development of the breasts and uterus. The premenarche symptoms—congestion of the breasts and abdomen, backache and irritability—were experienced monthly, but no flow was produced. *p*-aminobenzoic acid in dosage of 50 mg. t.i.d. was given over a 10-week period, whereupon the patient for no apparent reason went into insulin shock. The blood sugar 2¼ hours after the noon meal was 0.56 mg. per cent. The patient was easily taken out of shock with 250 c.c. of orange juice and 15 gm. of white sugar by mouth and 40 c.c. of 50% glucose intravenously. The patient felt fine after the reaction and during the following night a normal menstrual period started. The flow lasted 7 days with staining for one day. Since that time, 3 months ago, she has had a normal period each month. Her general

condition is greatly improved. In other cases of irregularity of the menarche with diminished flow, an increase in flow has been observed when *p*-aminobenzoic acid was given.

For the study of *p*-aminobenzoic acid in sterility, a group of women who had been sterile for a minimum of 5 years were chosen. Their cases had been thoroughly studied by competent gynecologists; all had utero-tubographs and Rubin tests with normal findings. All were studied for endocrinological deficiencies and in some cases therapeutic dilatation and curettage was done. Every attempt at treatment had failed. The husbands were studied by competent genito-urinary surgeons, also from the endocrinological point of view, and found to be normal in every respect. Twenty-two of these women were given *p*-aminobenzoic acid in doses of 100 mg. in tablet form by mouth with each meal and a 4th dose at bedtime. Treatment was administered for 3 to 7 months and conception occurred in 12 of these cases—*54.5%* (*Chart 5*).

mal pregnancies in varying stages of from 3 to 7 months. In ten cases of the group of 22 under consideration—45.5%—there was no favorable response whatever. In 6 cases medication was not taken as prescribed, therefore they should be excluded. One case (No. 19) was complicated by an old rheumatic heart disease with mitral stenosis and aortic regurgitation. In another (No. 20) there was a question of tubal obstruction; in still another (No. 22) a subtotal thyroidectomy for a toxic goitre was done during our treatment. In the remaining case (No. 21) there was no apparent contraindication, and it is considered an absolute failure. At this point I must again caution: it is to be realized that the work is still investigational and further observations over a considerable time are necessary before a complete evaluation of *p*-aminobenzoic acid therapy can be made.

I take occasion to mention further effects of *p*-aminobenzoic acid which were reported in a previous discourse.[27] This aromatic amine

Chart 5

EFFECT OF PARA-AMINOBENZOIC ACID ON FEMALE STERILITY

12 Positive Cases—100 mg. Paba 4 i.d.

Case No.	*Age*	*Yrs. Sterile*	Treatment Mos.	Deficiency Symptoms	Pregnancy Status At Present Mos.
1	26	5	5	Thyro-ovarian	4
2	24	5	3	None	6
3	29	7	4	None	5½
4	27	6	2½	Thyroid	2*
5	32	9	6	Estrogen	7
6	28	5	2	Normal	5
7	26	5½	4	Thyro-ovarian	3
8	28	7	3½	Thyroid	6½
9	25	5	2½	Thyro-ovarian	6½**
10	34	9	4	Thyroid	4½
11	30	6	5	Thyro-pituitary ovarian	3½
12	33	8	3½	Thyroid	7

10 Negative Cases—100 mg. Paba 4 i.d.

13-18	23-27	5*a*	*b*	None	None
19	27	5	5	Rheumatic heart*a*	None
20	24	6	3½	Tubal obstruction (?)	None
21	23	5½	6	None	None
22	31	5½	6	Thyrotoxicosis	None

a—average.
b—medication not taken as prescribed
c—mitral stenosis
*—accidental abortion
**—toxemia; well-developed fetus removed.

One in this group aborted following injury in an automobile accident at the end of nine weeks of pregnancy. Another was delivered of a premature well-developed fetus at nearly 7 months because of toxemia complicating lobar pneumonia. The other 10 at the present time are going through normal pregnancies.

causes an increase in appetite in many cases, a great increase in some. There is often an increase in the bulk of the stool with a more putrid odor and a change in color of the feces, particularly during the first few weeks of the therapy. No true diarrhea has been noticed, but in some cases an increase in the number of the stools to 4 to 6 daily, which was diminished with a decrease in the dosage of the drug. In these cases of frequent

stools there is a question as to whether the vitamin is absorbed.

The effect of *p*-aminobenzoic acid on asthmatics was of interest to me. Some asthmatics were benefited by the drug, others were unchanged. I do not know yet why *p*-aminobenzoic acid has an effect on certain individuals and no effect on others. However, the data clearly show that this drug has a protective action on adrenaline, which may explain its beneficial effect observed in some asthmatics.

In many cases the patients observed a stimulating effect and experienced a feeling of well-being. This action, of course, may be similar to that of other factors of the vitamin B-complex. The effect on impotency in the male was one of great improvement in many cases.

In conclusion, I wish to emphasize the close relationship between the clinical reactions of this vitamin and those of hormones in general. Many hypotheses can be entertained—but most essential are careful data that every practitioner can accumulate when this new vitamin is made available generally. I should welcome additional observations whether positive or negative that any one may care to send me. Mention should be made that war priorities have made this drug almost unobtainable. Science cannot be halted, further work should and will go on during this great battle for freedom, individual rights and sustained democracy.

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COFFEE AS A MEDICINE

(Ciba Symposia, *March*)

The interest which coffee aroused when first introduced from the East was chiefly medicinal. William Harvey (1578-1657), the discoverer of the circulation of the blood, drank coffee long before it became a fashionable beverage through the influence of the coffee houses. At his death he bequeathed to the College of Physicians 56 pounds of coffee to be drunk in his memory at the monthly meetings of the members.

A physician named Walter Rumsay was among the first to ascribe medicinal properties to coffee, particularly as a remedy against drunkenness. At a later date Dr. Radcliffe, himself a great frequenter of coffee houses, praised coffee as an almost universal remedy—stressing the fact that it must on no account be taken with milk.

In Walter Rumsay's book on health, *Organon Salutis* (1657), his "friend and compatriote," J. Howell presents the following interesting opinion:

"Touching coffee, I concure with them in opinion, who hold it to be that black broth which was used of old in Lacedemon whereof the Poets sing."

He also praises "the exsiccant quality it hath to dry up the crudities of the stomach, as also to comfort the Brain, to fortify the sight with its steem, and prevent Dropsies, Gouts, and Scurvie, together with the Spleen and Hypochondriacall windes."

IMPROVED IMMUNIZATION

In immunizing important desiderata are the use of materials which will not sensitize, and the production of least discomfort. Assistance toward these objectives is provided by use of combined antigens in the opinion of a recent observer (J. Florida M. A., 28:330, 1942). The author has employed Combined Diphtheria Toxoid-Tetanus Toxoid, Alum-Precipitated (Lilly) for the last three years without causing any untoward reactions.

The combination of diphtheria and tetanus toxoids is effected by mixing suitable amounts of the two toxins, previously detoxified by the use of formaldehyde, and by the use of alum, precipitating from this combination the diphtheria and tetanus toxoids. The individual toxoids are tested for toxicity prior to mixing, and the combined alum-precipitated toxoid is tested for toxicity after precipitation. Potency is determined by injecting guinea pigs with a human dose. After four weeks the blood serums of these animals must show at least two units of diphtheria antitoxin and two units of tetanus antitoxin per c.c. of blood serum.

Should exposure to either diphtheria or tetanus occur before immunization against each disease is completely established, the usual procedures for immediate protection of unimmunized subjects should be considered.

The Newer Venereal Diseases*

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THE VENEREAL DISEASES, ever a pressing problem, become more so for the duration of our national emergency. With the establishment of large cantonments, several factors tend to increase the incidence of venereal diseases: (1) young men are removed from their home ties and family influence; (2) psychologically the expression of virility comes to the fore whenever masses of men congregate, and physiologically this finds its satisfaction in the more rugged amorous exploits; (3) camp-followers, "femme de guerre" flock to these zones. Verily, they are the "whores-de-combat."

It is well that attention is being focused on combating syphilis and gonorrhea. It is unfortunate, however, that the sentinels of the public health fail to recognize that accompanying an increased incidence of these diseases are the third, fourth and fifth venereal diseases. These less-known afflictions are oft unrecognized, maltreated or ignored. The recognition and treatment of chancroid, granuloma inguinale and lymphogranuloma venereum merit your consideration.

1. Chancroid

Chancroid disease, commonly referred to as soft chancre, is known in the vernacular as soft sore. The responsible agent is the streptobacillus of Ducrey (*Haemophilus ducreyi*). It is a disease of great nuisance value, frequently self-limited. Occasional cases are encountered which are progressive, destructive and incapacitating. It is a disease more of the highways than of the byways. Its incidence is high in seaports, cities and towns on main highways, but it is rare in out-of-the-way towns and mountain villages. It follows the path of travelling circuses, marathon dance teams and carnival shows, vagabonds of the road and their ilk. In other words, it is a disease of the unclean, of the people who do not use soap and water with any degree of frequency, particularly after coitus performed on the run. The disease manifests itself by the appearance of a painful inflammatory ulcerative lesion three to five days after exposure. The ulceration has undermined edges, a dirty necrotic base, and a zone of erythema about the ulceration. The infection is autoinoculable and multiple ulcerations frequently appear. In 50 per cent of the cases inguinal adenitis follows. The adenitis often terminates in a suppurative bubo, usually unilateral, which if untreated will rupture and in turn become an active ulcerative process.

Diagnosis: The diagnosis is made from the clinical appearance of the lesion, by exclusion of syphilis and other venereal diseases. The intracutaneous test for this infection with Ducrey vaccine (Lederle) becomes positive 10-14 days after the appearance of the lesion. The test remains positive for life so that a repeated negative reaction is significant in that it rules out chancroid disease. A positive reaction signifies past or present infection and is merely suggestive and a diagnostic aid. The test is performed by the injection intracutaneously of 0.1 c.c. of Ducrey vaccine into the forearm. The reaction is read in 48 hours. If an area of induration of 7 mm. with an area of erythema of 14 mm. is present, the test is 4-plus positive.

Treatment: Therapeutic measures vary from washes and salves to caustics, electric cautery and surgery. The evil of meddlesome surgery is here exemplified at its worst. Incision of a bubo is rank surgical heresy. The evil wrought by such surgery is pitiful. Destructive, recalcitrant lesions usually result that frequently incapacitate the victim for months. Buboes should be aspirated when fluctuation appears and the site of aspiration dusted with sulfathiazole powder. The sulfonamide drugs are specific in the treatment of chancroid disease and when such therapy is started early, few buboes go on to suppuration. Washing the genitals carefully with soap and water is an excellent prophylactic against chancroidal infection.

2. Granuloma Inguinale

As the name implies, this is a granulomatous process with such a preference for the groin as to have earned for it a place in the category of venereal diseases. Its venereal origin, however, has never been absolutely proved.

Granuloma inguinale is a disease of the skin and corium which rarely involves the lymphatics. The inguinal lesion first presents itself as a pseudo bubo which ultimately ruptures and then burgeons forth as a granulomatous ulceration. Journals and textbooks have pictured this disease as an extensive, destructive, incapacitating ulceration, foul to one's nostrils and loathsome to one's sight. Such a concept has done much harm, for it does not take

*Read before the Fourth Medical Corps, Camp Gordon, Georgia, on February 10th, 1942.

cognizance of the early lesion which is so amenable to treatment. Early granuloma inguinale presents itself as a clean, raised tuft of velvety-red granulation tissue. The early lesion, if it remain undiagnosed or if treatment be delayed, may spread to involve the whole pudendal region. Secondary infection is the rule, frequently with fuso-spirochetes, the lesions becoming extensive, deep, destructive and foul. A slowly progressive cicatrizing type of granuloma inguinale also occurs. In addition to the external genitalia, vagina, perineum, buttocks and groin, the cervix may be the seat of the infection primarily; and infection of the neck, gums, larynx and mouth not infrequently occur along with or without genital lesions. The etiologic agent of granuloma inguinale is the Donovan body. This is believed to be a sporozoön. The disease may be found in temperate as well as tropical zones. It is, however, a great respecter of persons, for the white race is practically immune to the disease.

Diagnosis: The diagnosis is established by finding the Donovan bodies in stained smears obtained from scrapings of the lesion. Histologic sections of biopsies stained with hematoxylin (Delafield's) and eosin or by Dieterle's silver stain (Pund's method) will demonstrate the pathognomonic cell and the characteristic inclusion bodies.

Treatment: Fuadin intramuscularly or 1-per cent tartar emetic intravenously is specific in the early cases. Therapy must be continued for six months after apparent cure or recurrence is inevitable. The effectiveness of these agents decreases in direct ratio with the duration of the disease. Therefore early diagnosis of the lesion is of the greatest importance. The neglected case becomes chemoresistant, and after a number of years of sore affliction the patient dies. Some of these patients may have been saved by extensive x-radiation therapy along with continued chemotherapy.

3. Lymphogranuloma Venereum

Lymphogranuloma venereum is a virus disease, primarily of the lymph channels and nodes. In males, the characteristic bubo follows an evanescent penile abrasion of which the patient is frequently not aware. The bubo has alternating areas of softening and induration and usually breaks down and drains through multiple fistulous tracts. In the female it is characterized by hyperplasia of the vulvar tegumentary and subjacent connective tissue layers, concomitant with local lymph stasis and dilatation of the lymph channels. The surface of such growths may be smooth, rough, warty, polypoid or ulcerated. The ano-rectal component is an inevitable sequel in both men and women when the perirectal glands are involved by direct or retrograde extension of the infection. It is far more common in the female because of the lymphatic drainage from the vagina, the frequent site of the primary focus. Headache and vague abdominal pains are complained of, occasionally severely, and there may be high fever, joint pains and splenomegaly. The primary lesion is discovered 10-14 days after exposure, the adenitis 20-41 days. The bubo of lymphogranuloma venereum used to be called climatic bubo, for it was first seen in sailors returning from tropical countries and apparently no suspicions were entertained as to its acquisition by sexual indulgence.

Syndromes: Various entities which in the past appeared unrelated are now part and parcel of one disease and the syndromes are the inguinal (buboes, "blue balls"); rectal (stricture); anal (condylomata); genital (elephantiasis with or without ulceration); and urethral (nonspecific urethritis). These various syndromes may occur singly or in a variety of combinations.

Diagnosis: The intracutaneous test of Frei may be performed with either (1) Frei antigen (a) of bubo-pus origin, or (b) of mouse-brain origin, or (2) of chick embryo origin. The latter is most satisfactory. A positive reaction is one which evokes an area of induration of 5-6 mm. at the end of 72 hours. The control test with chick-embryo material should not evoke a response over an area larger than 3 mm. The Frei test is positive for life and this should be borne in mind, for it may be evidence of present or past infection.

Treatment: No specific therapy is available. The sulfonamides are of value in treating secondary ulcerations, draining sinuses and rectal leucorrhea, and their use may prevent inguinal suppuration. The antimony compounds are occasionally of assistance in treating the granulating ulcerative processes but have no effect on the disease *per se*. Manual dilatation of the rectal stricture along with diathermy is good palliative treatment. Warty and polypoid vulvar growths or elephantiasis vulvae or clitoridis may be treated by surgical excision.

Investigation in diagnosis, treatment and prevention of the newer venereal diseases is being aided by a grant to the University of Georgia School of Medicine by the Committee on Medical Research of the Office of Scientific Research and Development.

Syphilis.—The physician who treats and teaches syphilis must be one who knows syphilis in all its phases. He must understand its diagnosis, treatment and public health aspects. The physician with a sound training in internal medicine is the one most able to acquire a thorough knowledge of syphilis, and is best qualified to teach and treat in this branch of medicine.

—W. C. Thompson, in *Jl., Okla. State Med. Asso.*, Feb.

Pneumonia in Virginia

A Series of Fifty-three Cases

ERNEST LEE COPLEY, M.D., Richmond

THE REDUCTION in the mortality of pneumonia is one of Medicine's greatest achievements. As far back as we know this disease has been among the most dreaded. Century after century it took its toll of 25 to 40 per cent of those coming down with it. A telling blow was dealt with serum therapy. Then came the blitzkreig of the sulfonamides. Armed with these drugs, we can now regard pneumonia with a fair degree of complacency. Pneumonia is still a powerful and treacherous foe to be dreaded, to be promptly recognized and promptly attacked in force; but with our latest weapons we attack with confidence born of happy experience over a few short years.

The table reproduced from an official report tells the story of pneumonia's toll of lives from year to year since the establishment of the Virginia Bureau of Vital Statistics in 1913 through 1941. It graphically illustrates the variation in the mortality rate. The curve is a fairly typical one and is similar in large measure to those[1] for other sections and for the United States as a whole. It pictures the ups and the downs of the road over which we have travelled. We see how pneumonia like other infectious diseases has, of its nature, varied in prevalence and virulence.

Deaths in Virginia From Pneumonia 1913-1940

	Total		White		Colored	
Year	*No.*	*Rate*	*No.*	*Rate*	*No.*	*Rate*
1913	1,925	89.8	997	68.0	928	136.8
1914	2,278	105.0	1,155	77.6	1,123	165.1
1915	2,466	112.4	1,284	84.9	1,182	173.3
1916	2,765	124.6	1,352	88.0	1,413	206.5
1917	2,768	123.3	1,419	91.0	1,349	196.6
1918*	4,112	181.1	2,191	138.4	1,921	279.1
1919	2,278	99.2	1,217	75.8	1,061	153.7
1920	2,402	103.8	1,331	81.9	1,071	155.4
1921	1,782	76.6	980	59.7	802	117.0
1922	1,978	84.7	1,137	68.7	841	123.4
1923	2,195	93.5	1,264	75.7	931	137.4
1924	2,233	94.2	1,241	73.7	982	145.7
1925	1,944	82.0	1,052	61.9	892	133.2
1926	2,188	91.9	1,242	72.4	946	142.0
1927	1,828	76.4	987	57.1	841	127.0
1928	2,022	84.2	1,143	65.5	879	133.5
1929	2,144	88.8	1,191	67.7	953	145.6
1930	2,290	94.3	1,311	73.8	979	150.2
1931	2,150	87.6	1,218	67.6	932	142.7
1932	1,982	79.9	1,132	62.0	850	129.9
1933	1,792	71.5	1,018	55.0	774	118.1
1934	2,189	86.5	1,263	67.4	926	141.0
1935	2,260	88.4	1,319	69.5	941	143.0
1936	2,825	109.4	1,685	87.6	1,140	172.9
1937	2,622	100.6	1,552	79.7	1,070	162.0
1938	2,109	80.1	1,243	63.1	866	130.8
1939	1,829	68.8	1,049	52.6	780	117.6
1940	1,867	69.6	1,062	52.6	805	121.2

*Deaths of soldiers, sailors, and marines not included.

Significant features of the curve are the sharp rise for the year 1918 and the fall for the years 1940 and 1941 when chemotherapy began to be used widely. In 1933, the mortality rate for pneumonia was 55 per 100,000 whites and 118 per 100,000 colored. In light of the experience of other years, this was a low rate for white and colored. Evidently it was a period of mild virulence for pneumonia. The same might be said for 1921 when the mortality rate was 59.7 per 100,000 whites and 117 per 100,000 colored. Then, in 1940, when the sulfonamides were probably not very widely used, the rate was 52 per 100,000 whites and 121 per 100,000 colored. It might be argued on first thought, on the basis of these rates, that the sulfonamides had accomplished very little, because the drop in the rate was slight for whites and there was a rise for the colored, as compared to 1933 or 1921. However, during the year physicians were reporting greatly reduced pneumonia deaths for series of cases studied in different sections when treated with chemotherapy. Therefore, the most plausible, and I think the correct, explanation of the continued high rate for Virginia as a whole in 1940, was that the sulfonamides were not as generally used as they ought to have been.

In 1941, the reduction in the mortality rate for pneumonia, while not as spectacular as some series of cases reported, nevertheless, was the lowest on record for the state as a whole—48 per 100,000 whites and 100 per 100,000 colored. No doubt, some physicians were still afraid to use the sulfonamides in the treatment of pneumonia. Yet, it is a fair assumption that many more were using this valuable drug than were using it in 1940. However, this wider use ought to have resulted in a much lower mortality, and I am convinced the rate would have been much lower but for a virulent epidemic of influenza early in 1941, followed in many cases by a virulent type of pneumonia. In some cases, the virulence was comparable to that of 1918. It, therefore, seems most probable that with this added factor the death rate would have

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Typhus Fever *

With Report of Cases

HUBERT R. SHERRILL, M.D., Shelby

TYPHUS FEVER is an acute infectious disease, which occurs in two forms—the European typhus or epidemic, transmitted by lice, and the endemic or American form, transmitted by rat fleas. This paper will be primarily concerned with the American form.

In recent years in the Southeastern states and those bordering on Mexico a considerable number of cases of this disease have occurred with not a few deaths. A U. S. Public Health survey shows a steady increase in the number of typhus fever patients. The writer saw two cases of endemic typhus fever in the year 1941.

European typhus has a high mortality rate: the American form has a relatively low mortality rate. The form seen in the South is nearly always of the endemic type, with certain features which distinguish it from epidemic typhus. Endemic typhus is primarily a disease of young and middle-aged males. According to Kemp, the incidence in whites as compared with in negroes is twenty to one. However this difference is probably due to a large degree to the difficulty in recognizing the exanthem in the negro patient. The season of typhus fever is largely confined to the months of August through November. It may seem that physicians are notably lax in reporting the disease, so the annual number of rural cases must be greater than the number reported.

During the year 1941 there were four cases of typhus fever in Shelby. Two of these cases were treated by the writer. All four cases were in white males who worked in rat-infested buildings. It is of interest to note that two of them were employed in the same store. Both the infected flea and the infected rat are recognized as reservoirs of the disease.

The case of the endemic form is distinguished from the European epidemic form by the mildness of the mental manifestation, the more rapid recovery and the low mortality rate. The onset in the large majority of cases is abrupt, with fever, recurring chills, apathy, severe headache, general muscular aches and usually photophobia. It may give a history very similar to that of influenza, which is very misleading when the physician sees the patient the following day the temperature has subsided to normal. The temperature very often has gone up as high as 105. Occasionally the onset is more gradual with four or five days of malaise, making early differentiation from typhoid fever difficult. The temperature usually rises rapidly to from 101 to 105° and remains elevated with only slight morning remissions for 14 to 16 days, then falls by rapid lysis or crisis. In a small number of cases the temperature begins to subside about the ninth day, gradually returning by regular remissions to normal. The pulse is slow in relation to the fever but is not the dicrotic pulse of typhoid. The respiration follows the normal course.

The onset may be so gradual as to make it difficult to determine the number of days the patient has been ill. The exanthem of endemic typhus may be the principal diagnostic feature of the disease, appearing from the third to the sixth day as a discrete, pink, maculopapular rash. The lesions appear first in the axillae, spreading up the lower chest, and over the abdomen and later on to the flexor surfaces of the arms and forearm. The palms and face are seldom involved. In one of the cases seen by the writer the face was involved as much as any other part. In the very mild cases the skin manifestations may be so transient that unless looked for daily they may escape detection. In the more severe cases the color becomes deeper, possibly purpuric, and at times the lesions may present a dark central point, giving the appearance of a flea-bite. The duration of the rash varies greatly. In mild cases a dirty pink macular eruption may last only a day while in severe infections a subcuticular mottling may persist for three weeks. In general, the exanthem is an index to the severity of the infection; the central nervous system, too, reflects the degree of involvement. The chief characteristic of the rash is its irregularity in distribution, depth of color, elevation and outline.

Conjunctival congestion, lacrimation and photophobia are suggestive of measles, but the temperature curve, the prostration and mental apathy help to differentiate before the eruption appears.

In children differentiation from measles in the preëruptive stage may prove very difficult, and this difficulty may be added to by the fact that typhus fever is often accompained by a catarrahal bronchitis; such was the case in the first encoun-

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*Presented to the meeting of the Thermal Belt Medical Society, held at Shelby, N. C., October 16th.

Proctology of General Practice*

Walter J. Lackey, M.D., Fallston, North Carolina
First Chairman Section on General Practice of Medicine and Surgery
Medical Society of the State of North Carolina
Southern Medical Association

THERE is no more reason that a general practitioner should not treat rectal diseases than that he not attend a woman in pregnancy and confinement, see after the health of babies, give preventive inoculations, remove a cinder from an eye, or strap a sprained ankle. Maybe there is one reason: It is well established that a general practitioner is capable of doing everything in medicine and surgery that is unremunerative; and treating ano-rectal conditions pays right well.

Many diseases of the anus and rectum may be treated well by the general practitioner in his office, and the patient go home without being hospitalized or going to any specialist, thus saving the patient much time and expense, and, in addition, adding something to the purse and the prestige of the general practitioner. Furthermore many patients will go to their family doctor about their rectal conditions who will not go to a specialist or to the hospital; *i.e.*, they do so just as soon as they come to know that there's nothing to the common teaching that one must go to a specialist about piles and such.

The general practitioner can treat many cases and get good results, which otherwise would go on through the patient's life making it miserable, or soon get to the place where cure is impossible. Mistaken modesty causes many patients concern over having a rectal examination. They prefer their own doctor for such intimate matters. Then the family doctor is doing his patients a favor by treating these rectal conditions, and at the same time helping to meet the increased cost of living. Routine rectal examinations will be the means of discovering many a case of cancer before it is too late or even before the symptoms manifest themselves. Frequently cancer of the rectosigmoid will be discovered much to the surprise of the patient.

Any doctor familiar with the normal anatomy of the anus and rectum can do much of the proctologic practice with as good results as the specialist. Of course, certain cases should be referred to the surgeon and proctologist. That's what a specialist is for—the *exceptionally* obscure or difficult case in any field.

A knowledge of the anatomy of the anus, rectum and sigmoid is required. One must know what the normal looks like to appreciate the abnormal. Routine rectal examinations will provide this knowledge. A short postgraduate course during vacation is a great help. Soon one will get familiar with the normal anatomy. Some physicians are reluctant to make these examinations, but an examination of rectum is cleaner than one of the mouth. The aroma may not be so pleasing but pathogenic bacteria are not nearly so numerous nor so various in the rectum as in the mouth. A good history is very important in proctological conditions. Often a diagnosis can be made from the history alone. Pain much aggravated by bowel movement is almost diagnostic of fissure-in-ano. Itching, severe enough that the patient wakes himself at night scratching, is characteristic of pruritus ani.

After the history is taken proceed with examination after a routine in a certain order. Look for excoriations of the skin around buttocks. Draw the buttocks firmly apart and look for fissure-in-ano, openings of fistulous tracts, tuberculous ulcers, external hemorrhoids, and skin changes in pruritus ani and fungus infections. Feel the external hemorrhoids; they may feel hard due to thrombosis in the vein. As the finger is passed through the anus into the rectum tumors may be felt, or internal openings of a fistula, or any other abnormalities. Internal hemorrhoids, unless thrombosed, are not usually felt. They can be seen with the anoscope which is then passed. In cases which so require, the proctoscope and sigmoidoscope may be passed in the office in most all cases, though one have not a special rectal table. For the sigmoidoscopic examination the patient is put in the knee-chest position with the left side of the face on the table.

External Thrombotic Hemorrhoids

External, thrombotic hemorrhoids feel hard, vary much in size and shape and are always covered with skin; whereas internal hemorrhoids are covered with mucous membrane. In many cases small, external hemorrhoids which are thrombosed will disappear on using hot-water bottles or hot Sitz baths. The larger ones should be incised and the clot removed. Inject 2 per cent novocaine at the base of the external hemorrhoid. Then pick up the skin overlying the hemorrhoid with a clamp or Allis forceps and cut out an ellipitical piece of the skin using sharp, curved scissors. Then with Allis

(*PROCTOLOGY—P.* 170)

*Presented to the 44th Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greenville, S. C., February 23rd-24th.

CLINIC

Conducted By

FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.

A 23-YEAR-OLD grocer consulted me on April 21st, 1917, complaining of pain in the left side of his chest. He stated that 5 days previously he had felt feverish and out if his head, and a little nauseated and dizzy.. He would wake out of sleep every few minutes with a jump. The fever lasted 36 hours. The morning he came to me, the left side of his chest began to hurt. No vomiting. Appetite poor. Sleep poor. Constipated. Takes salts about once a month. No cough or hemoptysis. Feet do not swell. No dyspnea. Headache when first taken sick, none now. No chills or sweats. Past history unimportant. Habits good. Family history of no special interest except that his father has pleurisy.

His teeth needed attention, his nose was slightly congested, and there was a vesiculopapular eruption along the course of the lower left intercostal nerves and tenderness over the roots of those nerves.

The diagnosis here, of course, is obvious: *herpes zoster*. This condition, however, is by no means always so easy to diagnose. Some less obvious cases illustrate certain pitfalls.

"Zoster," or "zona" suggests an encircling or semiencircling eruption on the trunk. However, it occurs on the extremities, too; and here, following the course of the nerves, it has a longitudinal distribution. Thus a 20-year-old young woman showed a typical herpes of the arm and forearm, complaining of pain in that arm, with a band of papulovesicular eruption running down almost the whole extent of that extremity except for the hand.

Another case is that of a 65-year-old college professor who, in 1927, got a peculiar zone-like paresthesia in the region of the waist. Just before this he had had trouble with a foreign body in his eye, and he thought there might be some connection between the two conditions. Three days after the appearance of the paresthesia, he developed a vesicular eruption on his legs that was diagnosed by a good physician as herpes zoster. There was never any eruption on his trunk, no pain in his leg except that due to the irritation where the edge of his shoe rubbed a lesion. The eruption cleared up in 2 months. This is a rather typical case. I did not observe the herpes myself, but saw the patient soon after it had cleared up—this time because of a cerebral thrombosis.

On July 21st, 1936, a 49-year-old woman complained of waking during the previous night with pain in the left hypochondrium. She also had a transitory rhinorrhea. As she had had repeated attacks of angioneurotic edema, it was thought that the rhinorrhea might be a manifestation of this condition. There was little of importance in her history before waking with the pain in the night. Five nights previously she had had a good deal of abdominal gaseous distention, and three nights after that had been bitten on the back by some unknown insect. Two days before calling me she became rather weak, and the day before felt quite exhausted. Her temperature was 97.6, pulse rate 80, respiratory rate 20. She had an old thyroidectomy scar. A few punctate lesions over the left kidney she said were marks of the insect bite. She never found the insect, as she had her dress on at the time of the bite. There was a zoster-like eruption at the left costal margin. She also complained of a left-sided headache. There was a papular eruption on the left side of her abdomen which showed no vesicles at the time. She complained greatly of pain in the back on movement. The following day the entire eruption showed typical herpetic vesicles. For 2 weeks she suffered pains requiring analgesics. At times the pains of herpes zoster are severe and may last for as long as some months; there are records of patients being driven to suicide by the pain.

On June 27th, 1940, a 61-year-old shuttle-block inspector complained of pain and itching in the region of the left shoulder blade, and in the chest, eyes and legs. He stated that he had got chilled in a car 11 days before and 48 hours later itching and pain were felt in a spot at the lower inner edge of the left scapula. There was deep tenderness on pressure there, and a pain "like a toothache" usually awakened him about midnight and kept him awake the rest of the night. This spot remained painful till the day before he consulted me, when it cleared up. Four days before coming to me, the pain seemed to shoot from the spot described through to the front of his chest, and this was very severe. He had much less pain when moving about, and it was much worse at night. This pain coming through his chest hurt him 2 nights in succession, and then cleared up. About the same time the chest pain started, his right frontal sinus hurt, but his eye was not red or inflamed. Last night the left frontal sinus hurt and both eyeballs ached. He did not wear his glasses much, as they seemed to hurt him and he intended to get them changed. The day he consulted me he developed pain in the calves of his legs, but had no cramps. The week before he got transitory urticaria from tomatoes. Other items in his history threw no light on the trouble. Temperature 99.9, pulse rate of 94, respiratory rate of 22 and blood pressure of 168/96. The sinuses were not tender.

The teeth showed pyorrhea. His chest showed two patches of herpetic lesions, one on the back and on in front at the sites of the pain described. Otherwise, examination was negative.

Discussion.—The history of herpes zoster is very variable and at times misleading before the eruption appears. I was once called in the middle of the night to relieve severe chest pain aggravated by breathing. No eruption had appeared. I heard no friction rub, but on general principles strapped the chest with adhesive plaster. The patient said it gave no relief, and I should have removed it at once. The next day I was called to come out in a hurry to take off that.....plaster. I did so, finding the patient in agony, and there, under the plaster, was a typical herpetic eruption! This is an excellent way *not* to treat herpes zoster, but, before the appearance of the eruption, the very elect may be deceived. There seems, however, no good reason to leave on adhesive plaster that does not give some measure of immediate relief of pain, and the possibility of such pain being due to herpes, in which case the plaster adds insult to injury, should be kept in mind.

PROPOSED GRADUATE COURSE IN INDUSTRIAL HYGIENE AND MEDICINE

The Medical College of Virginia, Richmond, in cooperation with the bureau of industrial hygiene of the State Health Department, the Industrial Commission of Virginia, the State Department of Education, and the medical departments of several industries in and around Richmond, offers practical intensive courses of one, two or three months' duration in industrial hygiene and medicine for physicians

The course will cover:

First—Time spent with the heads of medical departments of two or more industries in and around Richmond,

Second—Work with the State Health Department's bureau of industrial hygiene on a survey of an industrial plant, and in the same bureau laboratory;

Third—Time with the Industrial Commission of Virginia to study their compensation set up and problems; and,

Fourth—Division of rehabilitation—special and adult education—State Department of Education;

Fifth—Lectures, seminars, discussions and assigned readings on compensation laws in the different states, casualty insurance as it applies to the field of industry, morbidity and mortality reporting in industry, statistics of industrial employment and lost time from occupational and non-occupational diseases, plans for medical care for small industries, tuberculosis and syphilis control programs in industry, labor's attitude toward medical programs in industry, the attitude of employers toward medical programs, and the position of the industrial nurse in the medical program.

The tuition for this course will be fifty dollars ($50.00) for the first month, and twenty-five dollars ($25.00) for each succeeding month. Since the instruction will be largely on an individual basis, it will be possible to start a student at any time after January 1st. No more than four students can be accommodated at any one time.

For further information about the course write—
The Dean, Medical College of Virginia, Richmond.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

HODGKIN'S DISEASE

HODGKIN'S DISEASE is fairly rare but we see a number of cases in this clinic each year, some of them so atypical that diagnosis is difficult.

An enlargement of the lymphatic nodes in the chest, or even in the abdomen, will cause pressure pain, or difficult breathing. Anemia, general weakness and an irregular fever, perhaps rather high over a short period of time, are seen in some cases. Cervical lymph-node enlargement is usually the first symptom; but this occurs in lymphatic sarcoma and in lymphatic leukemia.

The pathological picture is usually definite and the diagnosis is established by finding the Dorothy Reed or Sternberg cells to support the general clinical findings. One or two applications of deep x-ray therapy will often cause pronounced improvement—a diagnostic and therapeutic measure. Study over a number of days, using every possible means rarely fails in making a differential diagnosis.

Over a long period of years we have found deep x-ray radiation dependable for reducing the size of the tumor-masses. In intrathoracic involvement the x-rays are invaluable as a diagnostic procedure, as biopsy of these glands is practically impossible.

A painstaking examination of every patient with an obscure lymphatic enlargement or with a mass in the chest should be made, using every diagnostic aid at our command.

In Hodgkin's disease the principal treatment is deep x-ray therapy. The enlarged lymph-nodes may disappear with great rapidity. Other cases may respond much more slowly. Blood transfusions also are indicated.

Between the courses of x-ray therapy it is advisable to give iron and liver extract with a view to helping to combat the anemia and weakness incident to this disease.

THE TREATMENT OF INTERTROCHANTERIC FRACTURES

THESE FRACTURES present many problems, some far more intricate than those of intracapsular fracture of the neck of the femur. In such cases the fracture may be such that without some fixation and retention in proper position over a proper period of time we cannot hope to get a good result.

This type of fracture occurs at almost any age. Traction and abduction will put the fracture in the proper position, but it is difficult to hold it there with ordinary splints or even a plaster splint.

In a case of this kind we have found that the insertion of the Smith-Peterson nail together with an angle bar will hold the fragments in position and permit healing without shortening. Advantages offered by this method:

1. The bone can be reduced and held in position by internal fixation which eliminates to a great extent external splinting.
2. The period of stay in a hospital is a matter of days when otherwise it would be a matter of many weeks.
3. Patients can sit up in bed easily and in some cases be in a wheel chair in a few days.
4. The period of morbidity is greatly shortened.
5. Healing is more rapid and the patient can return to work much earlier.
6. The end results are far better than by any other method of treatment.

Unless for some reason this method of treatment is definitely contraindicated, it is the method of choice. However, not all patients who come in with fractures of the hip joint of various kinds are not subjects for this type of treatment. We must be able to evaluate the patient's condition in terms of whether or not the bones will heal and what should be done. In a greatly debilitated and anemic patient healing may be slow, may not take place at all; but as a rule intertrochanteric fractures heal, even in what we class as bad-risk patients.

The operation of reduction of an intertrochanteric fracture with the application of Smith-Peterson nail and angle bar to hold the fragments at proper angle until healing can take place is a tremendous advance over everything heretofore devised for this purpose.

Patients in bad physical condition and who suffer from wasting disease should be built up generally in order to encourage the union of the fracture. We must remember, however, that often with the best of care and treatment, no matter how well an open reduction is done nor how well it is approximated, there are occasions where healing fails to take place because of the patient's own condition and not because there is anything wrong with the treatment.

THE PROBLEM OF MEDICAL ATTENTION TO THE CIVILIAN POPULATION IN AMERICA DURING THE PRESENT WORLD WAR

DURING A WAR the combat forces must have everything that will aid in winning the war. The war must be won at any and all costs.

The civilian population, also, must be taken care of, and it is necessary that there be a conservation of medical care and attention so as not to overload the medical profession. The civilian population must be kept up to par in every way; those coming on, infants and on up, must receive proper food, clothing, care and attention for upon the youth depends the future of a nation.

Most of us are beginning to realize that sacrifices must be made, that many things to which we have become so accustomed as to regard them as necessities may become unobtainable. Many are awakening to the fact that the war is a serious matter, but very few seem to realize that the sacrifices they will be called upon to make until the war is over will increase as time goes on. It is likely that in time the burden upon the civilian population will be heavy; but we must remember that the fighting forces are exposed to dangers from the enemy every hour in the day and every day in the year until the war is over, and that they must be supplied with everything that will enhance their fighting power. Those who are not in the uniform of the Army, the Navy, or the Marines should realize that their duty is to supply these things in every way possible to aid the men in uniform. Sacrifices must be made cheerfully, not only without complaining, but without feeling that we have any cause for complaint.

Developments in the war to date have united our country and brought us to the realization that everything else must be subordinated to prosecution of the war with *all* our might. The very existence of America depends upon winning this war. Death is far preferable to losing the war and being under the domination of Hitler and Hirohito.

As the Army grows, more and more doctors will be called from civilian to military service. We have had a little time for adjustment.

Every individual in America must realize just how serious the situation is and coöperate in every way possible. There is no place for complacency. Neither is there any cause for discouragement.

Another problem is that of sufficient nurses for the armed forces. There will doubtless be a great shortage of nurses. The training of nurses is a good hospital's job, to be carried out in the right way and everything possible done to so train nurses as to make them efficient, capable and competent.

Proper preliminary education should be required of nurses, but unreasonable and foolish requirements should not be countenanced. The standard of training schools should be kept high but the requirements should be reasonable and not such as to shut the door in the face of those capable of being developed into nurses lacking in nothing required for tending our sick and wounded. Unreasonable requirements as to preliminary education of student nurses will rule out many, perhaps a

majority, of girls who would make exceptionally fine nurses. To be a graduate of any standard high school in North Carolina, or its equivalent, should be sufficient preliminary education for student nurses.

It does not improve the quality of the nursing given patients, civilian or military, to require long courses in non-essential subjects. Absurd requirements may create a *condition* but they do not improve a *situation.*

The reason for the existence of a training school for nurses is to supply nurses who can and will attend the sick, carry out the doctor's orders and, if in an institution, manage whatever work or department they may be assigned to. The idea is to make of these student nurses *good nurses,* not *poor doctors.*

With the fate of our nation at stake and, we might say, with the fate of civilization in the balance, people should begin to think serious thoughts about these and many other things. Frivolous things, unreasonable notions and efforts to impose unreasonable restrictions and requirements for the benefit of a few should be handled with an iron hand. When Churchill in one of his famous speeches before Parliament plainly and bluntly told the British people that they could expect "toil and sweat and blood and tears" the reaction was that of an increased intensity and strength of national unity. In America we are just getting into this, and a glance at the daily papers should be sufficient to see that we, also, will have to go through the same trying ordeal and we may as well prepare ourselves for it now.

Those who have enjoyed the bounty and plenty of a prosperous nation should willingly and gladly respond to their nation's call in time of need with every ounce of strength and power at their command.

The doctors and nurses of America are rising to the occasion. The real crisis has not yet come, but it will come, and when it does we as a nation must be united and working in unison and harmony toward the winning of the war and the winning of the peace. A united nation such as ours, working and fighting with every power and means at its command, cannot be beaten.

MEDICAL QUERIES ANSWERED

(Jl. Maine Med. Assn., Jan.)

A patient is first seen in a comatose condition—what laboratory examinations?

Dr. P.—Examination of the urine (catheter specimen). If sugar in the urine, examine blood for sugar; if albumin, casts and the sp. g. low determine the NP. N. With sp. g. 1.010-1.012, make a tentative diagnosis of uremia.

Dr. D.—First try to get a history, then examine. If alcohol on the breath, I wouldn't do much laboratory work. If stiff neck or signs of paralysis, a lumbar puncture Comatose, no stiff neck or paralysis, urine should be taken and if diabetes, blood sugar and a blood CO_2 combining power. Particularly in shock, blood typing.

Dr. K.—We recognize as emergency procedures, white cell counts, hemoglobin and red cell counts, blood typing, cross matching and the Kline test for emergency transfusions; and blood sugar, carbon dioxide combining power, NP. N. and urea in the blood, pneumococcus typing, determination of quantities of sulfonamide drugs, blood cultures.

Dr. G.—I trust that no one proceeds to order all these tests on the theory of being thorough. Fortunately this is the habit of only a few clinicians and in my opinion indicates a lack of understanding of the value of these tests and even a lesser knowledge of the particular problem presenting itself. Each case will demand one or a few of the examinations, but at no time all of them. The closer the clinical impression to the correct diagnosis, the fewer will be the tests required.

A single urinalysis gives more information than a single blood sugar determination. During the period of stabilization, blood sugar tests are of great value and often determine whether the patient is diabetic or not.

What is the relation between extensive laboratory requests and basic clinical knowledge?

Dr. K.—There is danger of establishing "cash register medicine," the attempt to make a diagnosis on many laboratory tests.

Dr. D.—The more you know about medicine, the fewer laboratory tests you perform. The diagnosis is usually made by a careful history and physical examination and a few laboratory tests.

Dr. K.—Because certain doctors and a good many of the large clinics perform a great many laboratory tests, patients have sometimes come to expect that; many think it is a great accomplishment and boasts of it to friends. A competent physician can convince his patients that his clinical study determines what laboratory tests are necessary to establish his diagnosis.

Dr. P.—Our younger physicians are apt to place too little stress on careful palpation and auscultation in a large number of cases, an x-ray examination of the chest is not necessary in every case.

Which of the liver function tests is most informative?

Dr. P.—There is no test that is wholly satisfactory.

Dr. D.—A combination of bile in the urine and increased urobilinogen, hepatic disease is likely. Both urine and fecal urobilinogen tests make a definite conclusion more probable.

Dr. G.—I have seen numerous tests within normal ranges in livers diffusely infiltrated with carcinoma. In my experience, the dye tests are of little value. A great reduction of cholestrol esters is practically diagnostic of extensive liver cell damage as seen in yellow atrophy.

Dr. K.—None of these tests is, in itself, diagnostic.

What is the differential diagnosis between bronchial and cardiac asthma?

Dr. P.—Bronchial asthma is a condition which may develop in early life. Cardiac asthma rarely before the age of 50. It may occur in a patient who has had no asthma before, and no shortness of breath previously. Most of these patients die within two or three years.

Usually the attacks come on when the patient is at rest. It is a form of left ventricular failure with pulmonary congestion.

Dr. D.—In cardiac asthma adrenalin may make the heart stop. You should set such a patient up in a chair, put tourniquets around the arms and legs and then give your intravenous treatments. He will want to sit up. Put him in a chair and let his legs hang down.

DEPARTMENTS

HUMAN BEHAVIOUR

James K. Hall, M.D., *Editor*, Richmond, Va.

PRO PATRIA

I wondered, and many another traveller, too, must have wondered, why the exterior surface of the comparatively new, big, red, brick building of four or five stories had suddenly become snow white. The reason is simple. Only a few weeks ago the building was merely one of many such substantial structures owned and used by the tobacco industry. Now the building is occupied by the United States Patent Office, or at least by that portion of the office lately transferred from the Capital to Richmond. The outer surface of the great building must have a new color. The coat or coats of paint that were applied are as white as the new-fallen snow.

One wonders why a new brick wall had to be painted any colour. One wonders still more why the colour white was selected for application. Night had enveloped the city when the great white structure fell first upon my vision. I was familiar with the red brick building. I could not imagine how it had suddenly been replaced by a snow-white structure of equal size.

The citizen to whom I expressed my astonishment was apparently neither surprised nor astounded. He had been told, he replied, that painters, ladders, scaffolds and paint and other paraphernalia all came down from Washington, spent a number of days, and returned again to their places of habitation. But the outer wall of the brick building was no longer red; it had become white, snow-white.

When the siren sounds and the City of Richmond is left in Stygian darkness, the United States Patent Office, on busy United States Route One, will be as obvious from air or from earth as a snow man on a front lawn.

It matters little, even if true, that workmen were paid $1.65 an hour for their labour in applying the plumbic white coat. Ever since the decree went forth from the Garden in Armenia that man must labour and sweat, it has been necessary to reward him for his industry. But one wonders why the public funds were so prodigally used in fabricating a target for the visiting bomber to utilize in orienting himself, even though the capital of the late Confederacy had inhospitably swathed itself in darkness. One wonders, too, what the recently-inducted passing soldier, sailor or marine may think when he contemplates the waste of lead and money and of labour in coating a new brick wall with paint.

Is the military recruit's monthly compensation somewhat less than the painter's remuneration for work for a fraction of two days? But the painter, of a few days and a few hours work each week, does not expect to have incised into his head-stone either *pro patria* or *dulce et decorum*. Glory can never be had at the bargain counter.

INSURANCE MEDICINE

H. F. Starr, M.D., *Editor*, Greensboro, N. C.

SOME GENERAL PRINCIPLES OF INSURANCE MEDICINE

A brief discussion of some of the broad underlying principles of life insurance medicine will, it is believed, be of interest particularly to those engaged in making examinations for life insurance.

Upon first introduction to underwriting methods used in life insurance, the physician is apt to be astonished at the use of what may seem to him to be crude and unscientific procedures. This impression is inevitable to one whose training has all been in clinical medicine which is a purely personal and individualistic undertaking. With closer acquaintance, however, one begins to realize that many great minds have studied the problem and have established procedures based upon broad scientific principles which, when applied to the difficult art of prognosis, are far more accurate and dependable in results than the most skilled could hope to attain by purely individualistic or clinical means.

These underwriting principles make it possible to foretell with an astonishing degree of accuracy the average duration of life of large, homogeneous groups of people, the different groups showing various characteristics, physical impairments and diseases. Yet no one is able either by underwriting or clinical methods to positively foretell the duration of the life of any one indivvidual. A colored woman once made the statement that her dead brother knew, and discussed weeks in advance, the very day and hour he was going to die. When asked how she accounted for this she explained, "Why the judge told him." In estimating the probable duration of life, underwriters have no such advance information.

The method employed in the selection of life insurance risks makes use of the group concept, which is based upon mortality experience and depends upon the operation of the law of averages. The group becomes the unit. The individual is weighed, measured, examined and investigated, but

only for the purpose of placing him in his proper group. When this is done, the individual loses his identity and becomes merged into the group. It is known what will happen to the group from experience accumulated. If the groups have been properly formed, what happens to the individual can be disregarded, but what happens to the group is of vast importance. The law of averages will smooth out the irregularities and assure uniform results. This law may be tested by using the simple example of tossing a coin. Toss a coin half a dozen times and it may fall heads every time, but toss it a hundred thousand times and it will fall heads fifty thousand times and tails fifty thousand times.

But the group method and the law of averages will not for long give satisfactory results in the face of improper handling of the individual. As in everything else, poor work or bad judgment will show in results sooner or later. The allowable margin of error is smaller than most realize. For example, in a group of 1000 individuals at age 24, one extra death in the first year, in addition to the expected 8 deaths, would result in a mortality of 112 per cent. According to underwriting standards that is missing the mark badly. No company could survive for long if all of its business continued to show such a mortality, yet using solely clinical methods we would consider one mistake in prognosis in a thousand cases as very good indeed.

The Medical Departments of practically all of the companies in the United States and Canada have for many years contributed their own experience to a pool and have continually sponsored statistical studies of all this combined material. Each company has at its disposal the results of these studies which are far more extensive and hence more valuable than any one company could collect for itself. In almost every company, research in some phase of insurance medicine is being carried on most of the time and, in agreement with best medical tradition, nothing is kept secret; the results of these studies are published for the benefit of all. Extensive and valuable literature on life insurance medicine must be examined to determine whether it is applicable to underwriting. If so, practical tests are made and statistical studies follow as soon as sufficient experience has been accumulated. At the present time valuable information is being gathered relating to x-ray examinations, electrocardiograms and blood-sugar tolerance tests, to mention only a few of the current problems now receiving close attention.

In spite of the safe and reliable principles upon which underwriting is based, the control of the mortality of a life insurance company is not an easy or simple matter. In this brief discussion of general principles we might say that we have merely taken a look at the horse. It is necessary to have a jockey to ride him in order to get the most out of him and win the race. As in clinical medicine, human beings are the subjects for study and the most of the information secured is passed along second-hand by human beings. Here that unfathomable and often wholly unpredictable thing we call human nature must be taken into account. It is even more difficult to determine what is fact and what is fancy than to pass judgment upon a known set of facts.

Daily routine requires handling with dispatch and accuracy a large amount of material. At the same time a picture of the broad view must be kept in mind extending many years into the future. New medical discoveries, new diseases, mortality trends and epidemics call for adjustments in practices. Our position at all times in regard to the economic cycle and variations in the preaviling interest rates must be kept in mind. War, geographical distribution of risks, age, sex and occupational distribution, the size of the policies and the plan of insurance of business already in force and that being written—all these have important effects upon the mortality which can be modified to a greater or less degree by underwriting practice and management.

While the laws covering underwriting are immutable, practices must ever be examined to see that they meet current conditions and conform to advances in medical knowledge. Changes must be made slowly and passing fads ignored. Underwriting is not static. It is very much alive and calls for alertness and progressiveness as well as sober judgment.

THERAPEUTICS

J. F. Nash, M. D., *Editor*, Saint Pauls, N. C.

BEST AND CHEAPEST WAY TO GET RID OF ANEMIA

While authorities are patiently and repeatedly advising the simple iron preparations for the treatment of the ordinary anemias, and liver or its fractions for those suffering from pernicious anemia, we are swamped with bulletins and blotters lustily advertising weird combinations of iron and extracts of liver, stomach, spleen and bone marrow, with or without vitamins and copper for use in all types of anemias. We should adhere strictly to proven facts and not be misguided by sales talks

Reflection here will help us realize why some

1. J. C. Sharpe, Omaha, in *Nebraska State Medical Journal*, November.

can not pay their doctor's fee at the end of the month.. The appreciation of these differences in cost will help to reduce the "high cost of medical care."

All this and more that is pertinent is told in fine style in an article[1] here abstracted.

First we must find the cause of anemia.

The form in which iron is to be administered is of minor significance, providing one gives adequate dosage—not the standard doses of textbooks but an individual problem with each patient. Hemoglobin of 70% should rise at a faster rate than one per cent per day. An average of 0.55 gr. of utilized iron daily is necessary to insure best hemoglobin response. Ferrous sulfate is 10 times more effective in hemoglobin regeneration than iron and ammonium citrate and five times as effective as Blaud's pills. Iron in liquid form (Elixir) is especially suitable for children and patients with peptic ulcer and anemia. Iron should be taken after meals. The daily iron requirement of the body—1/6 grain—is probably sufficient. The average daily intake of an adult is about ¼ grain. The iron requirement for women is four times that of men. In addition, at different stages of life such as in the growing child, the menstruating woman, the pregnant mother, or any individual with chronic blood loss, considerably more iron is required than is supplied by the average diet.

Hypochromic anemias are due to the lack of iron, whether it be due to such factors as deficient intake of food containing iron, faulty absorption, increased loss of blood or excessive demands for iron. Combination therapy is entirely useless and an unnecessary expense to the patient. A plain 5-grain tablet of ferous sulfate, t. i. d., costs less than a dollar a month. Some of the more popular combinations will cost the patient from $2.00 to $10.00 additional each moth.

There is no excuse for the injection of iron. The majority, if not all of the preparations of iron for intramuscular injection on the market are worthless. If given in adequate amounts to cure the anemia, the method is painful, dangerous and expensive.

While liver taken by mouth is valuable in all forms of anemia because of its iron and protein content, liver extract, oral or parenteral, is indicated only in pernicious and a few other marcocytic anemias; it has no beneficial effect in the iron-deficiency anemias.

The use of liver extract in pernicious anemia is a lifetime necessity. The intravenous injection of liver extract is rarely if ever indicated. Intramuscular injection is the method of choice—50 times its oral potency, and yet at only about one-fifth the cost. Assay of the liver extracts is inaccurate. As a result, comparison has been impossible. The Council on Pharmacy and Chemistry of the A.M.A. insists that they be labeled in "antianemia units," and omit the quantity of material from which it is derived. Accepted liver extracts for intramuscular injection are now based on the number of such units per c.c. of material. The average patient with uncomplicated pernicious aaemia should receive from *one to two units from twice a week to once every* 2 or 3 weeks. One should be guided entirely by the condition of the patient and the level of the blood count. Price per unit, it ranges from $.40 to $.12, the more dilute extracts slightly higher in cost.

The nutritional anemias of infants respond better to iron-copper combinations than iron alone. The copper requirements of the human adult are adequately supplied by the average diet in which liver has been incorporated. It is not difficult to create serious copper poisoning by administering relatively small amounts of copper.

There is evidence that Vitamin B Complex improves the nutritional status of the patient by its action in stimulating appetite and intestinal absorption. The routine use of purified vitamins, however, is unnecessary and expensive in that all of the substances can be given in the form of natural foods.

Ferrous sulfate is the most satisfactory and economical iron preparation for use in clinical practice.

DERMATOLOGY

J. Lamar Calloway, M.D., *Editor*, Durham, N. C.

THE MANAGEMENT OF PSORIASIS

Psoriasis is controllable rather than curable. This fact should be pointed out to the patient at the first interview. While occasionally a case is recovered from spontaneously, the majority of patients with this disease should be told of the prognosis from the start and taught to take care of their own condition in order to keep the eruption as inconspicuous as possible. The patient is often concerned as to whether the disease is inherited or infectious, and in general this question can be answered in the negative although it sometimes occurs in families. No known etiologic factor has ever been discovered and the disease exists in all forms from isolated single patches to generalized exfoliative dermatitis. Occasionally there is associated a form of arthritis which has a definite relationship to the skin manifestations and is known as psoriasis arthropathica.

The first lesion of psoriasis is a single scale-

topped papule which enlarges to form bright red plaques covered with white silvery scales. It never forms vesicles, never weeps, and does not leave scars. The eruption tends to appear principally over the scalp, elbows, knees and sacrum but at times the entire body may be involved. Psoriasis is more often a disease of the healthy person.

Therapy of psoriasis depends upon whether the disease is acute, spreading, quiescent, or receding. In the acute cases the patient should be treated mildly as for an acute dermatitis, with nothing more than starch baths, boric-acid ointment, and rest being used. In treatment the chronic, quiescent, or receding cases, strong treatment with intensively irritating preparations together with vigorous daily removal of scales is essential. Unless all of the scales are removed before the medication is applied therapy proves valueless. This cannot be too strongly emphasized for the patient. Scales may be removed by using a stiff brush, soap, and warm water. One of the most important aids in treatment is the use of sunlight or ultraviolet light. Locally, the use of anthralin ointment in strengths of 0.1 to 0.5% rubbed in vigourously twice daily after removing scales affords one of the very best therapeutic attacks. Three % salicylic acid and 2% ammoniated mercury may also be used to advantage but if the lesions are extremely extensive, one must guard against the absorption of too much mercury which produces toxic reactions. In extremely recalcitrant cases the Goeckerman regimen which requires hospitalization and consists of the daily application of crude coal tar and intensive ultra-violet light, may be necessary to control the development of new lesions. Vitamin D in large doses is helpful as is whole blood injected intramuscularly once or twice weekly. The only dietary regimen that seems to help is a diet low in nitrogen, but again this must be watched to be sure that the patient does not develop hypoproteinemia.

Psoriasis of the scalp is best treated by frequent shampooing with tincture of green soap, daily removal of scales and application of 3 to 5% ammoniated mercury and salicylic-acid ointment.

Psoriasis of the nails, psoriasis arthropathica and other ocmplications are best managed by a person especially trained in this field.

THE SOUTHEASTERN SURGICAL CONGRESS
POST-GRADUATE ASSEMBLY

Dr. Julian L. Rawls, Norfolk, is president. Those on the program from Tri-State territory are: Dr. Paul W. Sanger, Charlotte; Dr. F. E. Kredel, Charleston; Dr. Geo. T. Tyler, Greenville; Dr. Joseph D. Collins, Norfolk; and Dr. O. L. Miller, Charlotte.

GENERAL PRACTICE

James L. Hamner, M.D., *Editor*, Mannboro, Va.

THE GENERAL PRACTITIONER AND THE STATE HOSPITAL

After many years of living with psychotic patients, I am convinced that we must take more of the technique of general practice into our mental hospitals; that these hospitals must not be isolated, and that the more closely they resemble our general hospitals, the nearer our approach will be to a solution of many of the problems which now confront the psychiatrist, says this hospital superintendent[1].

Those of us who have practiced medicine in the specialty of psychiatry for 20 years or more have later too frequently seen our psychoneurotics in an active psychosis, that our maniac depressives have after a period of a few years become regressed schizophrenics. We have learned that classification of a patient in the schizophrenic or maniac-depressive reaction type does not mean a diagnosis.

Accurate psychiatric diagnosis means knowing the patient, enumerating his assets and his liabilities, the material the patient had to work with, the handicaps that he had, his method of approach to a solution of a problem, and much else.

The important thing to do is study the patients from the clinical standpoint to see what can be done about them (even as the general practitioner), treat them as intensively as we can, give up the idea that dementia praecox is an incurable disease, and more time in making real diagnosis.

More than two-thirds of the "civilized" world today are now devoting most of their time, energy and talents toward destruction. This state brings home to us the need for mental hygiene in the management of public affairs, for the guidance of those who are charged with responsibility for the conduct of nations is greater now than it has ever been. The evils which afflict a pathological personality set in high places soon permeate the body politic and make evident the thin veneer which separates modern man from the tom-tom beating savage.

We know that the mass mind is susceptible to influence under certain circumstances hypersuggestible.

A nation at war is in many respects like an alcoholic seeking flight from reality and reacting to its buried conflicts—unrest, war, destruction, human affairs in such a muddled state, ruled by blind, instinctive, unconscious forces. The world is desperately sick mentally.

The psychiatrist believes that mental hygiene and preventive psychiatry should and will eventu-

1. Isham Kimbell, Lakeland, in *Ky. Med. Jl.*, Jan.

ally have much to do in bringing about universal peace. We do not believe that wars are inevitable. Mature, independent thinking is essential to a healthy mentality and democracy comes closest to a fulfillment of mental hygiene ideas of mature and independent thinking.

The general practitioner of medicine must necessarily be concerned with psychiatric problems; more than any other group of citizens should they understand the necessity for stressing the need for teaching mental hygiene in our communities and in our colleges and schools.

Statistics indicate that 40% of the patients of physicians engaged in the practice of medicine present some mental problem. The general practitioner sees mental illness in the making, he recognizes the badly used emotional equipment, the misunderstood mental mechanisms, and unfavorable mental environment; the first budding fears, the incipient delusions and the growing confusions of a bewildered mind; and he is often able to guide the mal-adjusted individual back into the pathway of balance and stability.

It is the duty of the general practitioner of medicine to instruct and to inform, because the more information given out the better coöperation we will receive from the public. The goodwill of the people must be deserved and cultivated and must be based on mutual confidence and understanding. Standards must be established and every effort made to avoid bringing state hospitals down to the level of almshouses.

Of the problems of mental disorders only the general practitioner of medicine and those large hospitals can have a grasp of the magnitude. We observe among the younger generation nervous afflictions which did not exist 30 years ago. Men in high places suffer from sudden mental breakdown, and a career of achievement often ends in a severe mental illness. Christian civilization is on the decline and religion did give our fathers a shield against the buffets of fate.

Psychiatric clinics should radiate from the mental hospitals and meeting at various places where cases of mental ill-health may be referred for advice and appropriate disposition.

We must build up standards of organization and the administration of the affairs of our hospitals and safeguard these public institutions. Leadership in this field should be from the ranks of the general practitioners of medicine, and it should be so able as to stimulate general interest in psychiatric problems among medical students and post graduates to become trained for our hospital staffs.

Such programs have been in effect for many years in some sections of these United States.

It is important to awaken in the medical profession, in legislators, and in the general public, a recognition of the needs of the mentally handicapped. The general practitioner of medicine must be interested in the expansion of the modern state hospital into a broad field of usefulness; in an efficient and humane system for the care and treatment of the mentally ill; in the rise of the mental hygiene movement; and in the general elevation of standards of care and treatment of mental patients.

The general practitioner is already interested, and eager to meet these state-employed doctors more than half-way. It is a pleasure to have recognition from this representative member.

POINTS OF PROGRESS IN MEDICINE

From A Symposium Illinois State Meeting American College of Physicians, Dec. 6th, 1941.

Diabetes is strictly hereditary, on a recessive basis, but may be latent for years. All identical twins always become concordant after the age of 43 years.

Injury is never, by itself, an adequate cause for diabetes. There must be a hereditary background.

In the prevention of diabetes, any measure that will spare the pancreas, during early life or the early stage of the disease, will be helpful.

Sustained hyperglycemia and glycosuria, which do not respond to insulin, are caused by irritative disease of the liver—cholecystitis and cholelithiasis. In such cases, give from 400 to 500 Gm. of dextrose (in solution) intravenously, every day until the carbohydrate metabolism is stabilized; then operate. After the operation there will be no more hyperglycemia and glycosuria.

Sulfadiazine is the best sulfa drug so far—almost universal in application; low in toxicity; and protective against Friedlander's basillus. The only bad features of the drug—it costs 15 cents per tablet, and as yet there is no sodium salt for parenteral use—will probably be corrected soon. With sulfadiazine we can obtain and hold an adequate blood concentration of the drug with half the doses required with the other sulfonamides.

An interesting suggestion is the daily administration of small doses (0.05 Gm.) of neoarsphenamine in subacute bacterial endocarditis.

There is less empyema following pneumonia, when sulfadiazine is used. The fall of temperature following this drug (giving 1.0 Gm. every 4 hours) is more critical than that produced by other sulfonamides, and high blood concentrations can be maintained with smaller doses.

It is no longer necessary to treat meningitis by intraspinal (intrathecal) injection.

Tetanus toxoid should be given to children for prophylaxis, and may be combined with diphtheria toxoid.

In shock, the amount of Vitamin K in the blood is high; and the higher, the more severe the condition is.

Adrenal cortex extracts (true extracts, not synthetics) will often prevent shock, and are sometimes useful in its treatment.

Blood transfusion still remains the best treatment, though plasma (including the dried form, in emergencies) do well in some cases.

The retina is the most sensitive end-organ in the body, and more sensitive than any physical apparatus that has been constructed; the brain waves recorded by encephalography show that epilepsy and migraine are related, and that lesions in the frontal lobes destroy the sense of absolute time.

Glomset has reopened the question of conducting substance in the heart. We can demonstrate the bundle of His in sheep and beef hearts, but not in human hearts.

Hypertension is a big problem. This year 625,000 people died in this country from its direct or indirect effects. Renal ischemia is not the only, and perhaps not the main factor in causing it. Renal tissue extract relieves the symptoms, and the heart and eyeground lesions, even when there is little reduction of the blood pressure levels. Surgery is not so popular in treating hypertension as it was a few years ago. It is now finding its true level of usefulness.

We have now reached the point where we distinguished between rheumatoid and osteoarthritis, and gout. In rheumatoid arthritis, the whole man is sick, not merely his joints; and we must treat the whole man, including his psychic mechanism.

No specific remedy for atrophic (rheumatoid) arthritis has been found; but most of the remedies that have stood the test of clinical trial give about 70% of good results.

In coronary disorders the coronary dilators still offer the best results, and must be given in sufficient doses to do the work; but psychic factors are highly important and must have proper attention.

Desiccated thyroid is the best preparation of its general tyype. All patients should *have careful preoperative treatment before thyroidectomy.*

Male sex hormone has been given to female cretins, with some interesting results.

In diabetes insipidus, powdered pituitary extract should be insufflated high up in the nose.

Stilbestrol, given by mouth, is an effective estrogenic substance, but still seems to be dangerous.

We will have some similar, but safer, product for oral use in a few years. Methyl-testosterone is effective when given by mouth, but is still expensive.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

DIFFERENTIAL DIAGNOSIS BETWEEN ACUTE DISEASES OF THE CHEST AND OF THE ABDOMEN

ALL OF US need to be frequently reminded that acute disease in the chest may simulate acute disease in the abdomen, and to be told again and again the best means of going aright in such cases.

An excellent article[1], which does just these things is given in essence.

Conditions in the abdomen rarely are referred as pain to the thorax. Shoulder-tip pain occurs in less than 10% of all cases of gallstones. There must be adhesion formation involving the peritoneum high up where it reflects on to the diaphragm. Perforated ulcer into the lesser cavity may cause irritation of the left half of the peritoneal surface of the diaphragm, thus provoking pain to the left shoulder. After splenic rupture, the blood under the diaphragm may have the same effect.

Diaphragmatic abscesses caused by the tracking up of infection from an appendiceal abscess, or from leakage from a liver abscess, may cause diaphragmatic irritation and shoulder pain. Subphrenic abscess may cause an inflammatory reaction on the pleural side of the diaphragm, giving rise to fluid in the costophrenic sinus and lower part of the cavity, with resultant pain in the side of the chest from irritation of the intercostals.

After operation upon the abdomen, pleurisy or an infarct causing pneumonitis may produce pain in the lower chest.

Disease conditions in the thoracic cavity which may cause abdominal phenomena are pneumonia, coronary thrombosis and pneumothorax. Lobar pneumonia is the most frequent and if ushered in with nausea, vomiting and abdominal tenderness, may focus the entire attention to the abdomen. Some patients, especially children, develop an acute upper respiratory infection which rapidly spreads into the chest, and which a few days later produces acute abdominal pain. Maybe the streptococcus produces an acute adenitis in the abdomen

[1] G. P. Muller, Philadelphia, in *Jl. Med. Soc., N. J.*, Jan.

as well as in the neck. As clumps of lymph nodes are situated about the ileocecal junction, the patient complains of right iliac fossa pain and tenderness.Usually we can make the diagnosis by physical examination but if doubt exists and a portable x-ray examination can be made, this should be done.

Unless there is unilateral rigidity, we are inclined to wait, but if tenderness is distinct and causes wincing it is usually safer to operate.

Early coronary sclerosis may cause discomfort after eating and such patients are often treated for indigestion. They may, however, die from an acute occlusion or sudden myocardial failure. Close questioning will show that some symptoms appear when moderate exertion is attempted soon after a meal.

Angina pectoris, abdominal angina appearing particularly in arteriosclerotics and heart failure from whatever cause, all may produce severe abdominal pain with nausea and vomiting. Spontaneous pneumothorax may simulate acute abdominal affections. Two patients with intrathoracic hemorrhage were suspected of having upper abdominal disease.

Diaphragmatic hernia is a cause of pain in the epigastrium and lower chest, mild dysphagia, low chest discomfort and epigastric burning following a meal.

Herpes zoster, thoracic or abdominal, may cause severe abdominal pain with marked tenderness and hyperesthesia. Diagnosis is difficult in the prevesical stage but the distribution of the hyperesthesia along the course of nerve trunk is the best clue.

Diabetes is a cause of marked abdominal tenderness in the pre-coma phase. If this is associated with nausea, vomiting and gastric distention, the question of a acute abdominal disease often arises.

A short delay usually brings out the correct diagnosis, particularly when proper laboratory assistance is available. When the abdominal pain is hyperacute one is confronted with the need of operating promptly if there is any suspicion of penetrating ulcer or of acute appendicitis.

Fever and increased leucocyte count are to be expected in both acute pulmonary conditions and coronary occlusion. Unless I suspect acute perforation of ulcer I am inclined, in all doubtful cases, to wait for a number of hours, because the salt solution, morphine and rest do no harm and enable one to evaluate the symptoms more carefully.

Accurate differentiation must be based not so much on the pain as upon careful consideration of the history, symptoms and physical signs.

COMMON ERRORS IN THE SELECTION OF PATIENTS FOR SURGERY

A PATIENT with a nodular goiter, a fibroma of the breast, a calculous gallbladder, or an intestinal polyp, should not be deprived of the benefit of cancer prophylaxis; the offending organ or part should be removed. Symptoms should not be made an indication for surgical intervention when the condition is compatible with a life of usefulness and only a moderate degree of discomfort, or for a condition that does not have the possibilities of being cancerous.

Acute coronary thrombosis and allied cardiac conditions must many times have been mistaken for an acute manifestation of gallbladder disease.

Neurocirculatory asthenia masquerades as hyperthyroidism.

Pneumonia, pleurisy, chronic tuberculosis in the lungs, intercostal neuralgia—occasionally manifest themselves by symptoms that approximate closely intraäbdominal conditions.

The dysenteries, either amebic or bacillary, have contributed their small quota to disastrous laparotomies.

The blood dyscrasias, particularly those involving glandular hyperplasia and hypertrophy, contribute occasional cases for misdirected surgery; and before, and even since, the days of the Aschheim-Zondek test, pregnancy—the most frequent of all abdominal tumors—is added to the list for abdominal section.

Cerebrospinal disease, such as tabes dorsalis or incipient meningitis, has also been a source of error in surgical diagnosis.

Hematogenous infection of the kidney, nephroptosis, Dietl's crisis, and pyelitis—particularly of children and women—have all provided occasion for error in diagnosis.

Lead-poisoning, incipient diabetic coma, uremia, undulant fever, and the visceral manifestations of erythema exudate and angioneurotic edema have at one time or another been the basis for surgical intervention.

Abdominal allergy and avitaminosis; the functional diseases of the nervous system, no matter by what name they may be called, with either somatic or visceral symptoms; and early essential hypertension may simulate in exact detail bona fide surgical conditions.

Why should such inaccuracy exist? I think it is largely from careless thinking in that the most prominent feature of the clinical syndrome presented in each of these conditions is used solely as the basis for a surgical diagnosis.

C. G. Heyd, New York, in *Penn. Med. Jl.*, Nov.

There is a distinct lag in the application of present-day scientific knowledge by many. For example, many surgeons still believe that simple, uncomplicated duodenal ulcer is a surgical condition. Medical and surgical procrastination should be considered one of the major errors in the selection of patients for operation.

With the application of new increments to surgical usefulness has come a tendency to overextend the field of surgery, with a greatly increased mortality from multiple operations. Let me refer to the dangers inherent in too much surgery. The mortality from uncomplicated cholecystectomy is 3.6%. If to cholecystectomy is added hysterectomy, the mortality is 11.8%. If gastroenterostomy is added, the mortality is 16.4%.

Not an infrequent error in the selection of patients for laparotomy is upon *the hypothetical diagnosis of "adhesions."* Adhesions, other than the accident of volvulus, are not symptom-producing 10 to 15 years after an operation.

Nonsymptomatic retroversions are so in the majority that the responsibility for fixation operations must be given consideration.

Two principles of operative surgery should be universally applied: 1) to make the patient safe for the surgical operation, and 2) to make the operation safe for the patient.

Age, constitution, disease, physical condition, and the social and hereditary background of the patient must be canvassed. To do a suprapubic prostatectomy on an enfeebled old man when an intraurethral resection will give him an unobstructed urinary passage is to invite disaster. To do a subtotal gastric resection on a chronically starved patient with nonmalignant pyloric obstruction when a gastroenterostomy will suffice is to operate without due regard to the indications.

TUBERCULOSIS

J. Donnelly, M. D., *Editor*, Charlotte, N. C.

EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS

The National Tuberculosis Association, for a number of years, has sponsored a campaign during the month of April of each year, urging earlier diagnosis. In the past few years the facilities for the diagnosis and treatment of the disease have been increased and materially improved. Still, the results in earlier diagnosis are disappointing. Twenty years ago not over 10% of sanatorium admissions were in the minimal stage, 75% in the moderately or far-advanced stages. At the present time these percentages have not changed, for most sanatorium admissions are still advanced. Control of tuberculosis depends upon the recognition of tuberculous infection before it produces symptoms. Many cases have been found by the mass-skin-testing method, and the x-raying of all positive reactors to the skin-test. The general practitioner first sees the majority of cases, and he must use all methods of diagnosis available.

History, physical examination, laboratory tests, fluoroscopic examination and chest films are all equally important, and no one of them is to be used at the expense of the others. Many rely entirely on the x-ray films for the diagnosis, but the activity of a tuberculous process cannot be demonstrated by means of the x-ray film alone.

History must be detailed—whether there has been exposure—continuous or occasional—previous occurrence of jnfluenza, measles, pneumonia, pleurisy, frequent colds; mild digestive disturbances, fatigue on slight or no exertion, loss of energy or weight, slight rise of afternoon temperature and occasional pleural pain. More definite are severe cough, dyspnea and slight hemoptysis, but they also occur in other diseases. Although most cases of tuberculosis occur between the ages of 20 and 45 years, the disease is found in all age periods, even in the aged. One of every four deaths among women of 20-30 years is caused by tuberculosis.

A thorough physical examination should be done in every case of suspected tuberculosis, although in many of them slight or no physical signs can be detected. Early an accelerated pulse is a better inde of tuberculous activity than is fever. Often the pathological process is more extensive than the physical signs would indicate. An apparently robust individual may have moderately advanced lesions. The enlarged tuberculous hilum nodes in children cannot be detected by physical examination. The rales in non-tuberculous pulmonary conditions are more widespread than in tuberculosis, more frequently basal and bilateral; there is more cough and sputum.

Tubercle bacilli in the sputum means tuberculosis; a negative sputum does not mean no tuberculosis, but that examination of the sputum should be repeated. Care in the proper collection of sputum, and insistence on the returning of specimens is often necessary. The red cell sedimentation test, repeated at intervals, indicates whether or not activity is increasing or decreasing.

Sometimes a pulmonary condition which appears to be tuberculous can be classed as non-tuberculous by repeatedly negative tuberculin skin-tests, of great value in general practice.

The most important single procedure in diseases of the lungs is the use of x-ray films, but the film must be supplemented by the clinical and labora-

tory findings. A patient may suffer a pulmonary hemorrhage and yet the film be negative because the infiltration is not dense enough to cast a shadow. However, a film taken some weeks later will probably show involvement. In acute respiratory conditions, the film may show areas of congestion simulating tuberculous involvement. Several weeks later the picture may show that the congestion has betn absorbed. In mass-surveys of adults and children, the x-raying of all positive skin reactors will find many primary lesions, healed or latent, as well as cases of active pulmonary disease.

The fluoroscopic examination leaves no permanent record and is not as accurate in showing small lesions as the x-ray film. Repeated fluoroscopic examinations of suspected tuberculous cases will often recognize small lesions as they appear in the lung after the first examination has seemed negative.

The death rate from tuberculosis was 202 per 100,000 in 1900; it is less than 50 per 100,000 today. But this fact must not cause us to become complacent and let up in our efforts. The disease is still first as a cause of death among young people of both sexes. The long treatment required and the loss of earning power to the individual makes it still the most expensive of diseases. The earlier tuberculosis is recognized the shorter time it will take for a cure, and the less the patient will be handicapped in his or her future life and work. The fact that 75% of sanatorium admissions are at the present time moderately advanced or far-advanced cases indicates that our accomplishment as to earlier diagnosis leaves much to be desired.

UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

SURGICAL AND NON-SURGICAL MANAGEMENT OF RENAL AND URETERAL CALCULI[1]

RENAL AND URETERAL STONES form a goodly proportion of lesions directed toward the upper urinary tract. No uniformity of opinion exists as to the etiology of renal stones. Metabolic disturbances, vitamin deficiency, focal infection, colloidal imbalance, renal injury, various obstructive processes, and parathyroid tendency are mentioned as causative factors.

Considerable progress has been made in both the surgical and non-surgical management of upper-urinary-tract calculi. In the case of renal stones, conservative surgical measures directed toward preservation of renal tissue have supplanted radical surgery in a fair percentage of cases. This is made possible by careful preoperative study, using all the instruments of diagnostic precision. This conservative attitude is wise in unilateral involvement; essential in bilateral involvement. When all available data point conclusively to a non-functioning kidney or only the bare possibility that the kidney will be restored to normality following removal of a stone or stones, nephrectomy is indicated. The younger the patient, the more conservative should be our attitude.

During the last decade, there has been a marked decrease in the number of operations on the ureter. From 80 to 85 per cent of stones that are within the bounds of ureteral accommodation can be recovered by cystoscopic manipulative methods.

If unilateral or bilateral renal stone or stones are of such size as to exclude passage down the ureter, surgery is indicated in order to avoid future damage to the kidney. In the so-called silent unilateral stone when no symptoms are present and the other kidney is normal, surgery is advisable. Early removal of the stone may save a kidney and lessen the danger of a pathologic lesion to a single kidney.

In the case of unilateral, branched renal calculi, with or without infection and the other kidney normal, conservative surgery is indicated. This conservative attitude becomes increasingly important in patients of 50 or even 60 years of age. In older patients, when rather extensive damage is present in the kidney, a more radical measure, such as nephrectomy, may be indicated. If the patient is 60 years of age or older and is practically symptom-free, we may delay operation and place the patient under strict observation. Occasionally this disease is discovered incidental to a general physical examination, when x-ray studies are done on account of back pain suggesting arthritis more than kidney lesion.

Our experience in the case of bilateral, branched renal calculi has not been very extensive, but we believe surgery is indicated where feasible. When detailed study gives promise of reasonable restoration of kidney function, we advise surgery; and in a case suggesting prolongation of life, even if permanent nephrostomy drainage is apparent, we suggest surgical intervention. If one had the opportunity to study the comparative life expectancy of a substantial number of cases of bilateral, branched renal calculi under conservative medical management and surgical methods, the latter group would enjoy a very comfortable margin of recognized superiority. It is difficult to insist on surgery in unilateral or, especially, bilateral branched renal

1. Sanford, J. H., & Barnhart, W. T.: Surgical and non-surgical management of renal and ureteral calculi. *J. Urol*, 46:1061, Dec., 1941. *Abstract.*

calculi, when the patient is symptom-free, though we realize that one or both kidneys are being slowly sacrificed. Some of the surgical problems involved in bilateral, branched renal calculi must become an individual problem, hinging on the individual operator's skill.

Each case requires a detailed history, microscopic and cultural study of the urine, blood chemistry studies and blood counts. A plain film of the urinary tract followed by excretory urograms supine and erect is routine, and retrograde pyelograms are added in cases suggesting renal damage in order to obtain better visualization of the renal pelves. Complete medical study follows, with attention to secondary toxic anemia. Preoperative ureteral-catheter drainage is instituted when infection and retention are present, especially if there is systemic reaction, thus establishing better postoperative drainage of the kidney operated on. The choice of operative approaches, alone or in combination, is determined to some extent by preoperative study. The size of the kidney and relative amount of pyelectasis and calectasis with the size and shape of the stone are the suggestive factors in selecting the most advantageous surgical approach.

Details will vary, but certain operative refinements are necessary in every case. Good exposure with as little trauma to the kidney as possible is essential, especially when considerable infection is present. X-ray of the exposed kidney before closure of the renal pelvis or parenchyma, especially in multiple stones, is necessary.

Unless the patient is very ill from an acutely blocked kidney with no assurance of relief in sight, surgical interference should be deferred. Some stones that appear to be fixed in place surprise one by passing spontaneously, or promptly following the first cystoscopy and ureteral manipulation. Good judgment is essential in the primary classification of the case as to the relative merits of surgery and cystoscopic manipulation.

The decision to operate or not to operate should be made after all evidence has been obtained. The x-ray interpretation as to the location and size of the stone and the ureter, and the damage to the kidney as demonstrated by pyelography, offers the most valuable differential points. It is important to maintain a rather safe blood nitrogen stability. Ureteral dilatation is best achieved by ureteral catheters. In cases requiring hospital care, prompt control of infection by the use of the ureteral catheter in conjunction with urinary antiseptics is essential. Postoperative follow-up is important. Clearing of infection, sterilization of the urine, and ureteral dilation to avoid stricture formation are essentials in any case of ureteral stone.

Summary

Renal stones preoperatively studied, and classified as too large to pass down the ureter, should be surgically removed unless serious contraindications be present. The danger of infection and the threat of a stone moving to an obstructive position is constantly present.

Of 200 cases of calculi in the upper urinary tract seen by us in the last 6 years, 64 were renal, 125 were ureteral and 11 were both renal and ureteral. The renal cases were handled in the usual manner, that is, observation or surgery. In the 125 cases of ureteral calculi, surgical removal was done in 17, and the calculus was passed or extracted from the ureter in 108 cases.

SURGERY

Geo. H. Bunch, M. D., *Editor*, Columbia, S. C.

THE ROMANCE AND THE TRAGEDY OF ANESTHESIA

It has been just a hundred years since Crawford W. Long at Jefferson, Georgia, for the first time in recorded history performed a surgical operation painlessly. After inhaling the fumes of sulphuric ether the patient became profoundly asleep and was in that unconscious state operated upon without pain and without knowing that the operation was being performed. Two years later, in 1844, a dentist of Boston, Horace Wells, extracted a tooth painlessly after the patient had inhaled nitrous oxide gas, and four years later, in 1846, Dr. Warren in the Massachusetts General Hospital amputated a leg painlessly after ether had been administered by Dr. W. T. G. Morton, a dentist who had previously extracted a tooth under ether without pain. Dr. Warren's remark to the spectators, "Gentlemen, this is no humbug," has proven to be wonderfully prophetic, for, in this our day in every hospital in the civilized world ether is given for the prevention of pain at operation. From this and from the discovery of asepsis by Lister the development of general surgery has been possible.

The words anesthesia and anesthetic were coined by Dr. Oliver Wendell Holmes, the author of *The Autocrat of the Breakfast Table* and the discoverer of the infectiousness of puerperal sepsis.

At previous times Morton had consulted Dr. Charles T. Jackson, a surgeon and a chemist of Boston, about the properties of sulphuric ether. When Morton claimed to have discovered the anesthetic effect of ether Jackson himself claimed the distinction and campaigned so effectively that he succeeding in preventing the passage of a bill sponsored by Daniel Webster, United States sena-

tor from Massachusetts, for Congress to award Morton $100,000 for the discovery of anesthesia. Jackson was also instrumental in defeating Morton's attempt to patent ether, under the name Letheon, although he had been assured by Morton of a percentage of the profits from the patent.

Long, finding that Morton was claiming priority in the discovery of theranesthesia, obtained affidavits from the patients and the witnesses of the several operations performed under ether by him in 1842. When Sherman burned Atlanta and marched through Georgia on his way to burn Columbia Long buried the papers for safe-keeping. After the Civil War he deposited them in the library of the University of Pennsylvania where he had been graduated in medicine. Pennsylvania has championed his cause against that of Wells, Morton and Jackson of Boston. The State of Georgia has placed a statue of Long as one of her two most famous sons in the Hall of Fame in the National Capitol in Washington, and just before Postmaster General Farley retired from office Long was honored by the Federal Government as the discoverer of anesthesia by having his picture placed on a United States postage stamp.

It seems fitting that of the four men concerned in the discovery of anesthesia two should have been dentists and two physicians. Tragedy was the part of all four. Long died an embittered old man, uncertain that his claim to priority would ever be recognized by the world; Wells became insane and committed suicide; Morton died penniless, heartbroken from disappointment and worry due to persecution by Jackson; and Jackson became a chronic alcoholic and died in an insane asylum.

In 1847 the anesthetic effect of chloroform was discovered by Dr. James Y. Simpson of Edinburgh, Scotland, in his attempt to ease the pains of labor. The Church denounced him for opposing the will of God who had made woman to suffer in labor. It was only after Simpson had delivered Queen Victoria under chloroform that anesthesia during labor was generally accepted. In her appreciation of the services Simpson rendered her and other women in childbed, this good queen conferred a knighthood on this good doctor, and so he became known to fame as Sir James Simpson.

COCAINE ADDICTION

(W. J. Bristow, Columbia, in *Annals O., R. & L.*, Dec.)

It is a common belief among the laity, and to some extent among the medical profession, that a large number of persons in the United States are addicted to the use of cocaine ,either for its supposed pleasurable effects or for the relief of pain and discomfort in the nose and paranasal sinuses. Nose and throat specialists have been accused of producing the cocaine habit by the frequent use of cocaine sprays or packs. Most otolaryngologists use cocaine daily in their practice for its rapid anesthetic and ischemic effects. No entirely satisfactory substitute has been discovered. One of the largest clinics in the country still uses cocaine for tonsillectomy under local anesthesia.

The conclusions to be drawn from a review of the literature; from interviews with doctors, druggists and hospital superintendents, and from personal experience in using cocaine in the practice of otolaryngology, are that:

1. Cocaine addiction is excessively rare in the United States.

2. Otolaryngologists as a group should not be taxed with being instrumental in producing the cocaine habit among certain patients.

3. It is high time that some physicians revise their ideas as to the habit-forming properties of cocaine.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

SOME USES OF OPHTHALMIC LENSES OTHER THAN FOR VISUAL AID

FROM time to time an oculist is confronted with a patient who needs an optically ground lens to be used before either one or both eyes, and not as a prerequisite to vision. Such a requirement is clearly indicated in certain specific instances either for safety or for cosmetic reasons. The use of protecting goggles in industrial eye hazards and the various types of tinted lenses are not a consideration in this discussion.

The purpose for which these lenses should be prescribed is a proper consideration for the oculist in any individual case where indicated. There should be no hesitancy on his part to carefully apprize the patient of such a requirement since such advice is good preventative medicine on the one hand, and on the other, an aid to the economic security of the patient. The patient, then, knowing the reason for such action, has the privilege of accepting or rejecting it. In other words he has not had something summarily prescribed for him the purpose of which he does not comprehend. Later, should he go elsewhere for advice and treatment, he is in a position to give a clear appraisal of his problem to the oculist to whom he may apply. The face and professionel acumen of the first oculist may thereby be substantiated rather than degraded by the second oculist who, after an examination, and finding no visual need for lenses, might be provoked into saying to the patient "you have no need for this lens." In such a case such a statement by oculist No. 2 could only be predicated upon the lack of a careful analysis of the problem before him or his ignorance of its necessity. The unfortunate thing about it is that it does happen and in the ways mentioned. When such a situation arises before the uninitiated patient the net result is to cast opprobrium on all oculists in the opinion of this patient.

Ophthalmic lenses for safety: To protect the only seeing eye, and a rimless frame is absolutely contraindicated. Within the year the writer has seen two serious injuries to an eye with the loss of one from a traumatic fracture of a lens in a rimless frame. The disastrous result is obvious had either of these patients only one eye. If the lens is placed in a stout frame it will maintain its integrity despite severe trauma. If trauma is severe enough to shatter such a lens the eye would have been lost regardless. On the other hand its presence before such an eye will protect it against many minor types of trauma that would destroy it.

Ophthalmic lenses for the cosmetic effect: (a) For those patients having a high hypermetropic error in one eye and its fellow amblyopic or blind from other causes, a lens should be placed before the non-seeing eye, not necessarily of wholly, but of nearly, the dioptic strength of the lens before the seeing eye. This is for the purpose of making the non-seeing eye appear to be equal in size to its fellow. The same would apply to high myopia in one eye and the other blind or nearly so. (b) If one eye is normal, the other blind and smaller than its fellow a plain lens before the normal eye and a plus 3 or 4 diopter spherical lens before the other eye will give the 2 eyes about the same appearance. (c) Where one eye is normal or requires a plus lens before it and an artificial eye is being used, and therefore smaller than the normal eye, a plus spherical lens of the necessary dioptric strength can be placed before the artificial eye to make it comparable in size to its fellow. (d) Where one eye is normal or when it may require a refractive lens, and the other eye disfigured or otherwise a severe cosmetic problem, a frosted lens may be used before it. In this particular instance both lenses may be impregnated with deep tint.

These problems, in the main, are of a simple practical nature but for good cosmetic results require more than a cursory analysis for the best results.

Patients who present these problems are usually grateful for the suggestion and the application of these measures as an aid to their visual security and cosmetic appearance.

MYASTHENIA GRAVIS: ITS TREATMENT AND RELATION TO THE THYMUS

(L. M. Eaton, in *Proc. Staff Meet. Mayo Clinic*, Feb.)

One can conclude that the relation of myasthenia gravis to thymic abnormalities is established at least in many instances, beyond reasonable doubt. It is recommended that röntgenograms of the chest, including lateral views, be made in every case to determine whether or not detectable hypertrophy of the thymus is present. Although the frequency with which the course of myasthenia gravis can be altered by rontgen irradiation of the thymus is unknown, it is a procedure which seems to be worth trying. Perhaps those patients sustaining a remission within two or three months after irradiation of the thymus are the ones that surgical extirpation of all thymic tissue will improve or cure. Further studies now in progress are necessary. Meanwhile, we can be grateful for effective symptomatic treatment with prostigmine, ephedrine, guanidine and potassium salts.

PEDIATRICS

EDWIN L. KENDIG, JR., M.D., *Editor*, Richmond, Va.

PANEL DISCUSSION ON PREVENTIVE INOCULATION

TETANUS

ALL of us need to keep fully posted on disease prevention. This abstract[1] is reliable.

Persons who have been previously immunized against diphtheria may be given tetanus toxoid, alum-precipitated, in two doses. Infants and children who have not been protected from diphtheria should be given two doses of the combined diphtheria and tetanus toxoid. The interval between doses should be from six weeks to three months If after two or more years another dose is given the antitoxin level will rise 20-fold or more within two or three days. In the light of present knowledge we will be wise to give a third dose of toxoid if a person has a wound two or three years after the initial immunizing process.

The first dose of tetanus toxoid does not sufficiently protect and in case of a wound of questionable nature before the second dose has been administered tetanus antitoxin should be used. There is in children little or no reaction to either the tetanus or combined toxoid. The presence of the hard nodule under the skin should cause no concern.

The use of tetanus toxoid produces a lasting immunity while the use of tetanus antitoxin gives such a short period of protection that tetanus has supervened owing to the persistence of tetanus bacillis in a wound several weeks after the original injury and injection of tetanus antitoxin.

SCARLET FEVER

Persons who give a positive Dick test can be immunized by injecting 5 graduated doses of toxin at weekly intervals; results are nearly 100 per cent successful.

The common reactions consist of sore arm, fever, vomiting and joint pains. All these may be very severe. They can be avoided by regulating the size of the first injection by the size of the Dick test and succeeding injections by the size or the severity of the preceding one. A sufficient number of injections must be given, as many as 10 or 12 may be required, which is perfectly feasible in institu-

1 H. E. Utter *et al*, Providence, in *R. I. Med. J.*, June.

tional work but difficult in private practice.

Active immunization against scarlet fever, as I have described it, is useful in institutions. In private practice, except under special circumstances, this immunization is hardly worth while.

Passive immunization can be produced by the injection of commercial antitoxin or human convalescent serum. It lasts only a few weeks, is often very helpful in epidemics in institutions.

WHOOPING COUGH

A total of 100 to 120 billion organisms are given at intervals of three weeks, divided into three or four doses—0.5, 1.0, 1.5, and 2.0 c.c.—at two to three-week intervals. Sauer has been giving three doses of the double strength—1.0, 2.0 and 2.0 c.c., or in older children—1.0, 2.0 and 3.0 c.c.

DIPHTHERIA

Nine months of age is the time to start the procedure but there is no objection to the inoculations being given as early as six months.

Two doses of combined diphtheria and tetanus toxoid, or three doses of plain toxoid-diphtheria, or two doses of diphtheria alum-precipitated toxoid provide ample protection throughout childhood against diphtheria.

The Schick test should be done six or eight months after the completion of the course of inoculations.

MEASLES

Convalescent serum is the most satisfactory agent for modifying measles. Placental extract is the next most effective; 2 c.c. should be given to children under five or six years of age and 3 or 4 c.c. may be given to children above five or six years of age.

PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor*, Greenville, N. C.

Material for March and that for April have been interchanged.

MILESTONES IN NORTH CAROLINA PUBLIC HEALTH

(Continued from last month)

1917. The General Assembly passed the following important health legislation: Chapter 263, entitled "An act to prevent and control the ocurrence of certain infectious diseases in North Carolina;" Chapter 244, entitled "An act to provide for the physical examination of the school children of the state at regular intervals;" Chapter 276, entitled "An act for the coöoperative and effective development of rural sanitation;" Chapter 257, entitled "An act to prevent blindness in infancy, designating certain powers and duties and otherwise providing for the enforcement of this act; Chapter 66, entitled "An act to provide for the sanitary inspection and conduct of hotels and restaurants;" Chapter 286, entitled "An act to regulate the treatment, handling and work of prisoners."

Following the enactment of this legislation, administrative machinery, consisting of a Bureau of Epidemiology under the direction of Dr. A. McR. Crouch, a Bureau for the Medical Inspection of Schools under the direction of Dr. Geo. M. Cooper, and a bureau for County Health Work, under the direction of Dr. B. E. Washburn, were established. Dr. Washburn, an officer of the International Health Board, was lent to the state without cost, and the International Health Board, in addition to furnishing Dr. Washburn appropriated $15,000 annually for County Health Work in accordance with the provisions of Chapter 276.

The State Laboratory of Hygiene moved into its own building January 15th, 1917.

The state was admitted to the registration area of the Union for births in January, 1917, the Bureau of the Census having found after investigation that our birth registration was 96 per cent complete.

The special campaign against typhoid fever begun so satisfactorily in 1915 was continued.

In December, 1917, Life Extension work, which consisted briefly of the free physical examination of interested citizens for the purpose of advising them as to their physical condition and needed hygienic reform and medical treatment, was begun on a county basis.

The annual appropriation for the State Board of Health was $60,772.16. The annual appropriation for the State Laboratory of Hygiene was $12,500, and this, in addition to $9,087.22 in fees permitted under the laws of the state to be paid to the Laboratory for special work, provided the Laboratory with a total annual budget of $21,587.22.

1918. Much of the work this year was influenced by the war and had to do with preparedness.

Considerable time was given to assisting Major John W. Long, Medical Aide to the Governor, in the work of organizing the Medical Advisory Boards and in interesting physicians in entering the medical service of the Army and Navy, and, later in the year, in inducing the physicians of the state to become members of the Volunteer Medical Service Corps.

The Laboratory during this year began the distribution of a high grade of diphtheria antitoxin.

The Bureau of Medical Inspection of Schools, under the direction of Dr. G. M. Cooper, developed, and with a degree of success that we may say established, free dental clinics for the public schools of the state. The Bureau also developed to a successful extent an arrangement in the form of adenoid-and-tonsil clubs for the practical and economical treatment of public school children suffering from these defects.

The Bureau of Venereal Diseases, paid for by the Federal appropriation, was established in September under the directorship of Dr. James A. Keiger.

Mr. Warren H. Booker, for the last seven years the efficient director of the Bureau of Engineering and Education, left in September for the Red Cross work in France.

Perhaps the most important health work of the year 1918 was that in the epidemic of influenza. The epidemic began early in October and caused, in that month alone, 6,056 deaths; in November 2,133 deaths, and in December 1,497 deaths, a total during the last three months of 1918 of 9,686 deaths.

The annual appropriation for the State Board of Health for 1918 was $73,210.38.

The annual appropriation for the State Laboratory of Hygiene was $12,500. The Laboratory, during this year, collected $8,532.48 in fees for special work, so that the total income of the Laboratory for this year was $21,032.48.

HOSPITALS

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A COLLEGE DEGREE VERSUS A NURSES TRAINING COURSE

It would seem to the writer that the mark has been missed in regard to the purpose of any education. The weakest argument in favor of any type of college training is that it gives the person a background which makes for better citizenship. As viewed from an economic standpoint, a college education is a waste of time and money unless it better qualifies the individual for moral, mental and financial success. The so-called better background is worth no more than broken-down aristocracy.

All that is necessary for one to enter a senior college is that one have a high-school diploma. It matters little how the time spent in high school has been spent; there are courses designed in our colleges to accept these graduates. In college, the common gossip of the campus is of the personal likes and dislikes of members of the faculty; the cost of books; what fraternity one belongs to or contemplates being asked to join; and last, but not least, the athletic standing of the college.

Then classes begin—lectures by the practical and the impractical professors; the enthusiastic and the unenthusiastic; the supereducated and the moderately educated; by those who care and those who don't care what happens to the student. Some are born teachers and some are not; some require too much time for the subject they teach; some refuse to recognize individual characteristics. Some high marks are made because of study by certain students of the professor rather than of his subject.

By the junior year, some will believe anything fair under an unfair professor, and begin to cheat. A professor is apt to think so many good marks are made upon the examination papers because of his superior teaching, and those who do not make good marks to be chaff to be winnowed out. It is seldom that a student who has individual ideas is allowed expression.

The author of this article has for years made it a habit to study the after life of the "poor" student and has been agreeably surprised more often than otherwise to find that these students have made good. You will find them at the head of the church, at the head of civic organizations, at the head of industry, and at the head of the various professions. All of this summed up would indicate that there is a weakness in the method in which education is served to the youth of today. The average student has more difficulty in weeding out the useful from the useless, with the help of the professors, than he would out in business. To be sure, we have our personnel officer and his is the most valuable department to the student. Oftentimes however, he is over-worked and a great deal of his time is consumed helping with financial problems. When graduation day comes and the honor student, along with the others, receives his diploma, few have a job waiting for them. Of those who do, there is much yet left to learn, and many become disgusted when they find the man who didn't go to college knows more about the business, draws a larger salary, and enjoys more prestige than he himself does.

When a student nurse enters training, she is not taught a smattering of every science; but anatomy, physiology and pathology, and, most valuable of all, the practical application of the knowledge gained from these courses. The student nur-

ses do not spend a lot of time discussing the various professors and their peculiarities. Most of the teaching is done by people who are performing the services in a way satisfactory to patients and their teaching is not fraught with a lot of impractical ideas. A student nurse has ample opportunity for self-expression without being discouraged by a sarcastic professor. The patient is rather in place of the professor, and decides upon the merits of the nurse to a much larger extent than the teacher, and a satisfied patient is automatically a good mark for the student. Statistics will show that the final examinations before graduation are much more practical than those of any other type education and fewer seniors fail to get their diplomas in the nurses training schools than in any colleges of the country, West Point and similar military academies probably being exceptions.

The financial and social strain upon the student nurse is far less disturbing than it is with college students. If it is possible to curb some of the impractical ambitions of the Nurses Boards, the finances will not be difficult for any girl to handle. Student nurses do not require a great deal of social life because they daily have the finest society in the world—the individual citizen stripped of all frills and fancies, indeed, the man and woman beneath. Some outside recreation is usually provided without any expense by friends of the hospital and the newly-made friends of the nurse. The moral surroundings are much safer because there is little time unsupervised, there is less pent-up energy to deal with, there is more physical fatigue to be satified when off duty and there are opportunities to study the things that most students have always wanted to know concerning themselves and the opposite sex.

The crux of the nurse's success lies in two dominant fields. One, satisfaction with what you are doing; and the other enough to buy necessities, comfort and sufficient luxuries for contentment. When the nurse graduates, she immediately becomes qualified, just as the nurse who graduated ten years ago. She is called on duty and the same confidence put in her as in the older nurse. She enjoys the same prestige in the profession. She is a valuable citizen to herself, her family, her friends and her neighbors. I contend she is a much more valuable citizen than the average college graduate, simply by reason of her education.

PNEUMONIA—Copley
(From P. 142)

been much higher except for the use of the sulfonamides. In other words, we believe the sulfonamides to be responsible for the lowest mortality rate on record for both white and colored in a year of severe epidemic of influenza and pneumonia. And, while the number of *pneumonia* deaths for Virginia *dropped* from 329 in January, 1940, to 230 in January 1941; *those from influenza increased* from 122 in January, 1940, to 241 in January, 1941. This increase in influenza deaths indicates the increased morbidity of the respiratory infections in Virginia, coincidentally with the spread in waves of influenza throughout the United States.

The fifty-three cases of pneumonia presented were treated in the ten-year period 1932-1941. I shall discuss, in brief detail, a few of the typical cases, and summarize the series as a whole, with some reference to treatment.

Case 1.—This case, though not the first case treated in the series, that of a colored woman, aged 27, is fairly illustrative of the stormy course of pneumonia before the introduction of chemotherapy. This woman was seen first November 7th, 1937, she having been ill for two days with a cough and malaise and having awakened that morning with a shaking chill and pain in the right side. The physical signs of lobar pneumonia were present in the right lower lobe. The patient was put in hospital and symptomatic treatment instituted. The pneumococci being Type I, 70,000 units of the appropriate serum was given intravenously, in four injections a few hours apart. The temperature returned to normal early the next morning, only to rise in the afternoon. On the second day, 40,000 units of the serum was administered in two doses two hours apart. These last injections had no appreciable effect on the pneumonia, either because the doses were probably too small, or that the pneumonia had existed too long to be affected by serum. After a turbulent course recovery was made. I believe the serum therapy the first day helped to turn the tide in her favor. The temperature course illustrates the course of illness.

Case 2.—In striking contrast is the next case, that of a white boy, aged 19, first seen April 28th, 1941. His signs and symptoms were suggestive of early pneumonia. Codeine and aspirin were prescribed in liberal doses and the forcing of fluids advised.. The next day he was acutely ill with a high fever and a severe pain in the left side, and the signs of a fully developed pneumonia in the lower lobe of the left lung. He was sent to a hospital and chemotherapy administered. The chart confirms the splendid response. In this case sulfathiazole should have been given the first day he was seen.

Case 3.—A white man, aged 66, ill with influenza, came to my office on January 7th, 1941. He had not been well for several days, had 102.5° temperature and moist rales could be heard in the chest, but no definite signs of pneumonia could be made out. Taken to a hospital he became irrational and incontinent, developed a non-productive cough and rales could be heard more easily throughout the chest, particularly on the left. Repeated examinations of sputum found only a few pneumococci. This patient had suffered from an old duodenal ulcer which a röntgenologist, several months previously, had reported healed. Because the diagnosis was in doubt, x-ray examination of the chest was ordered on the third hospital day. However, it could not be determined from the x-ray exmination whether it was an inflammatory process or a malignant growth. In the meantime, the patient had become acute ill and the physical signs were plainly those of lobar pneumonia in the left lung. He was given sulfathiazole and the temperature chart shows the prompt recovery.

Three-fourths of the series were patients whom I treated in their homes. It was among this group that all the deaths occurred. Some of these cases follow in brief outline.

Case 4.—Typical of the cases in which very adverse circumstances were encountered, was that of a colored man, aged 35, first seen on February 14th, 1937. He lived in a congested home, ten miles from the city. The weather was cold and rainy. A considerable stretch of the road was almost impassable. He had been ill for three days and had a temperature of 104° with a rasping cough and the sputum was rusty, blood-tinged. Tubular breathing was heard over the entire right chest, accentuated breath sounds on the left. He was obviously critically ill. The diagnosis was lobar pneumonia of the right lung. It was impossible to transfer him to a hospital and he could not buy serum. Codeine and morphine were given for control of cough and pain and such supportive treatment as could be given under the circumstances. He was visited the following two days. On the fourth day he died.

Case 5.—Another home case was that of a frail white woman, aged 67, first seen April 15th, 1937, when she had been sick for three or four days. Her appearance was that of a desperately ill patient, temperature high, cough harassing, complaining of a terrible pain in the left side of her chest. Examination revealed complete consolidation of the left lower lobe. It appeared that symptomatic relief was the treatment of choice. Accordingly, a trained nurse was put in attendance and instructed to render comfort with general measures. She was visited daily, but ran a downhill course and died on the fourth day from the time I first saw her. I presume death occurred on the seventh day after the onset of pneumonia.

Case 6.—In contrast to these last two cases, was that of a white woman, aged 80, treated with chemotherapy. She was first seen the afternoon of December 12th, 1941, when she gave a history of fair health until three days before, at which time she had developed an increasingly severe cough and accompanied by chilly sensations. Her temperature was 102.5°, fine moist rales and bronchial breathing were heard in the base of the right lung. The breath sounds were accentuated on the unaffected side. The expectoration was thick, yellow and blood-tinged. She was given three grams of sulfathiazole as an initial dose, and one and one-half grams every four hours for four doses; thereafter one gram every four hours. A nurse was put in attendance. The response was prompt. The temperature fell to 99.5° in thrity-six hours, and then ranged between 99 and 100°. In the meantime, however, a new complication developed nearly every day. While the red blood cells maintained themselves at a satisfactory level, symptoms of cystitis were complained of, with urinary frequency and incontinence, but no hematuria. Constipation followed with abdominal distention. A rectal tube and enemas were employed, but these procedures greatly weakened her. Cyanosis appeared for the relief of which digitalis was given intravenously. However, by the end of the ninth day she was definitely on the road to recovery—temperature normal, heart function adequate, gastrointestinal and genito-urinary systems functioning normally; and she was asking for nourishment. The effective weapon, in this case, I am confident, was sulfathiazole.

These fifty-three cases fall easily into two groups. Thirty-seven comprise the first group, of which twenty-four were white and thirteen colored. These occurred before the introduction of chemotherapy. Routine symptomatic treatment with supportive measures was given in these cases, with the addition of serum in a few. Of the ten patients to die four were white and six colored—a death rate of sixteen per cent for the white and nearly fifty for the colored. The high mortality for the colored patients is in keeping with the high rate for that race generally. The mortality of sixteen per cent for the whites is low. The diagnosis was confirmed in a large majority of the cases by consulting physicians. It is my observation that children tolerate pneumonia much better than do adults.. Significantly, of the sixteen of the thirty-seven patients fourteen years old or younger, only two died. The oldest patient in the group was 99 years old. She had pneumonia in the lower lobe of the left lung and recovered.

No death occurred among the sixteen of the second group of the series, several of whose cases have been discussed. Ten of these cases occurred in 1941, and in all these sulfathiazole was given. The other six occurred in 1939 and 1940 and were given sulfapyridine or sulfathiazole. A few of the patients to whom sulfathiazole was given complained of nausea; a very few vomited. In general, however, this drug was well tolerated, and in no case was it necessary to withdraw it. Two patients were nauseated and vomited and one passed bloody urine following the administration of sulfapyridine, necessitating temporary withdrawal.

Case 7.—A case of a 60-year-old woman who had lobar pneumonia in the lower lobe of the left lung, ran an uneventful course under the exhibition of sulfapyridine. A few weeks later, however, all the signs of pneumonia appeared in the right lung. This time the patient vomited when given the drug. She was able to retain small and frequent doses, however, and while no definite conclusion can be drawn, I believe, the sulfapyridine enabled her to withstand the stormy course of the second illness.

There was no drug rash or leukopenia in any case following the taking of sulfapyridine or sulfathiazole. Altogether the reactions were negligible generally, while the recovery of a large majority of this group was spectacular with the administratiton of these wonderful drugs.

The results of nonspecific therapy in the first group of thirty-seven cases, a few of which were discussed in some detail, are consistent with the mortality for pneumonia as generally reported before the introduction of chemotherapy. The results attributed to the sulfonamides in the treatment of the second group of cases are in keeping with results reported for small groups of cases, in several of which there was no mortality. Undoubtedly deaths would have occurred in my series had the number of cases been larger. However, as low as four per cent mortality was reported[2] for a series of a hundred cases. In a recent study of fifteen thousand cases[3] in the vast majority of which the sulfonamides were given, the mortality was a frac-

tion over nine per cent. It seems obvious that chemotherapy is the treatment of choice for pneumonia. Happily it is rapidly becoming the accepted therapy. Sulfapyridine and sulfathiazole are specifics in the treatment of pneumonia, and they have the further advantage of being reasonably safe, inexpensive and easily administered. Treatment does not have to wait on bacteriological study, but can be given immediately.

I have not as yet used sulfadiazine. This addition to the family of the sulfonamides is reputed[4] to be less toxic than sulfathiazole, and particularly less toxic than sulfapyridine, and as effective as either one in the treatment of pneumonia. It is also claimed that smaller doses will maintain higher levels of the drug in the blood. It is said to be absorbed orally less rapidly than sulfathiazole, and sodium sulfadiazine is recommended intravenously as the initial treatment in the fulminating pneumonias.

In the few cases in which no member of the sulfonamide family can be tolerated recourse must be had to serum therapy. Routinely I have collected and typed the sputum whenever it has been possible to do so. In many instances this has been difficult, particularly in the cases of children. I have requested that the sputum of all patients in hospital be typed. Cases may arise that will require both chemotherapy and serum therapy. Serum therapy is indicated in any case of pneumonia in which leukopenia has resulted from previous administration of any one of the sulfonamides.

The dose of sulfathiazole recommended is four grams as the initial treatment, and one gram every four hours until the temperature and pulse have been normal for three or four days. Treatment should be instituted as soon as pneumonia is suspected. As the condition of the patient improves the dose may be reduced to half a gram every four hours, or a gram every six hours. A red blood cell count and urinalysis should be done twice a week as long as the drug is continued.

Finally, it should be emphasized that no drug can take the place of assiduous general care in the treatment of the pneumonia patient. While the sulfonamides have greatly increased the need of laboratory studies, they have not lessened the need of good nursing care.

The 3 tables to follow show fairly the features to which I wish to call attention:

Table I

Patient First Seen November 7th, 1937

Temperature Course—Nov. 7th, 102.2-103.4; 8th, 98.6-103.2; 9th, 101.4-103.2; 10th, 103-103.4; 11th, 100.6-103.4; 12th, 99.8-103.4; 13th, 101.2-100.

Pulse Course—Nov. 7th-10th, 120-90-120; 11th-13th, 100-110-80.

Respiration Course—Nov. 7th, 24; 8th, 30; 9th, 20-40; 10th, 26-38; 11th, 32-48; 12th, 20-38; 13th, 26-20-24.

		Hgbn.	*Whites*	*Polys.*	*Wass.*
Blood — Nov.	7th—	74	18,000	91%	Neg.

Urine—Trace albumin.

Medication—Nov. 7th, 70,000 units serum; 8th, 40,000 units serum.

Diagnosis: Lobar Pneumonia R. L. L.

Table II

Patient First Seen April 29th, 1941

Temperature Course—April 29th, 103.2-103.8; 30th, 102.4-100.2; May 1st to 4th, axebrile; May 5th, 99 (the last rise).

		Hgbn.	*Whites*	*Polys.*	*Wass.*
Blood—April	29th—	100	19,800	89%	Neg.
	30th—	98	13,700	86	
May	1st—	93	15,300	83	
	2nd—	92	9,000	75	
	3rd—	96	8,400	80	
	4th—	90	7,000	79	

Urine—Negative throughout, except for traces of albumin.

Medication—April 29th-May 3d—Sulfathiazole Gm. 4 initial dose, then Gm. 1 q. 4 h.

May 4th—Sulfathiazole Gm. 1 q. 6 h..

Pulse Course—April 29th, 114; 30th, 120; thereafter, 80 to 85.

Respiration Course—Never higher than 28, steadily 18-22.

Diagnosis: Lobar Pneumonia L. L. L.

Table III

Patient First Seen November 7th, 1941

		Hgbn.	*Whites*	*Polys.*	*Wass.*
Blood — Nov.	7th—	76	7,000	76%	Neg.
	11th—	81	19,100		
	13th—	80	10,000		

No acid-fast bacilli; rare pneumococcus.

Urinalyses, negative except for trace albumin.

Nov. 9th—X-ray of chest. Report—Not conclusive. Either a malignant or an inflammatory process.

Medication—Nov. 9th, Sulfathiazole Gm. 4, then Gm.1 q.4h.

Pulse Course—Nov. 7th, 85-110; 8th, 80-100; 9th, 100-114; 10th, 110-128; thereafter gradual decline to 80.

Temperature Course—Nov. 7th, 101.2-103; 8th, 99.4-101.6; 9th, 102.2-101; 10th, 101.2-102.4; 11th, 101.2-98-100; thereafter normal.

Respiration Course—Nov. 7th19th, 22-30; 10th-11th, 34-40; thereafter steady decline.

Diagnosis: Influenzal Pneumonia L. L.

SUMMARY

The mortality from pneumonia in Virginia from 1913 through 1941 is discussed. A chart is presented which illustrates the variations in the mortality rates from year to year regardless of therapy until the introduction of the sulfonamides. It is pointed out that the mortality rate was the lowest in 1941 when epidemic influenza was prevalent. Credit for this is given the sulfonamides.

A series of fifty-three cases of pneumonia is presented, several in considerable detail, covering the ten-year period from 1932 to 1941. Of the thirty-seven cases of the series treated with nonspecific therapy ten proved fatal. Of the sixteen treated

with chemotherapy prompt recovery ensued in each case. No serious untoward reaction was encountered in any case.

Chemotherapy is, beyond doubt, the treatment of choice in pneumonia. It is recommended also that the sputum be typed whenever possible for information to be used in the cases of the small number of patients who cannot tolerate sulfonamides.

A few general suggestions are made as to dosage and the necessity of bi-weekly laboratory examinations of the blood and urine.

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GYNECOLOGY

SIMPLIFIED HORMONAL TREATMENT OF AMENORRHEA

FROM Palestine comes a communication of great practical interest. Over the dozen years just past we have been alternately dazzled by the promises of the detail men as to results obtained by the administration of animal organ substances in cases of abnormal menstruation; and on the other hand, dazed by hearing professors and specialists speak for an hour or more on the skill and time required in fitting proper substance to the case before us.

Dr. Zondek[1] seems to have simplified the matter:

Amenorrhea may be a symptom of a general disease (diabetes, tuberculosis) but usually is of endocrine origin. The tests for making clinical and hormonal studies in these cases are frequently not at disposal, so it is my aim to suggest a simplified method for producing bleeding in amenorrheic women.

To the women, it is of little significance from what anatomic structure of the uterine mucosa bleeding occurs. The two types of bleeding from a proliferative and from a progestational endometrium produce the same psychic and physical effects. Up until now it was generally thought that to produce bleeding the uterine mucosa had to be stimulated to proliferation by estrogenic hormone first and then the secretory phase had to be induced by progesterone. The treatment lasted 25 days.

It was surprising to find that a 5-day treatment with a total dose of 50 mg. of progesterone alone was sufficient to produce bleeding in amenorrheic women and that, therefore, the preparatory treatment with estrogens was quite superfluous. I have never succeeded in inducing bleeding with *progesterone alone* in women with primary amenorrhea or with castration amenorrhea. In primary amenorrhea and in castration amenorrhea from 0.5 to 1 mg. of estradiol benzoate and 10 mg. of progesterone are mixed in one syringe and given intragluteally daily for five days.

In determining the cause of amenorrhea a general examination should be undertaken. An amenorrhea which is, for example, only a symptom in Cushing's syndrome involves different considerations than an amenorrhea in a myxedematous patient. Thyroid is still being insufficiently used in the treatment of amenorrhea. There is no doubt that the production of bleeding not only relieves the women physically but also greatly increases their physical well-being.

For secondary amenorrhea of more than two years' duration, a total of 50 mg. of progesterone distributed over from two to five days.

For secondary amenorrhea of less than two years' duration, the same dosage or a total of 25 mg. of progesterone with from 2.5 to 5 mg. of estradiol benzoate distributed over two days.

A further simplification will be possible by the oral administration of pregnen-in-on-ol instead of progesterone.

1. Bernhard Zondek, M.D., Jerusalem, in *Jl. A. M. A.*, Feb. 28th.

TYPHUS FEVER—Sherrill
(From P. 143)

tered by the writer, in which the chest findings were so pronounced that an x-ray examination was made and involvement of the right lung found.

The gastrointestinal features are usually confined to anorexia and obstinate constipation. At times in children nausea and vomiting may accompany the onset, and diffuse abdominal pain may be a feature. In the average infection the cardiovascular system shows little toxic effect. However, in severe infection and in elderly patients with impaired cardiac reserve, the cause of death may be acute cardiac damage. In these severe infections death is caused most often by cardiac failure. Phlebitis and thrombosis have been reported, but these complications occur in less than one per cent of the cases, auricular fibrillation was observed for several days in a fatal case. Mental

apathy, clouding of consciousness and mild delirium are usually prominent. There seems to be a complete absence of sequelae referable to changes in the central nervous system. In one case of the writer's it was noted that there were no mental changes until the temperature had practically reached the normal line; then the patient became mentally cloudy and passed into delirium which lasted for three days. This mental change came on rather suddenly and cleared up as suddenly as it came on.

Usually there is a leukopenia of 3,000 to 6,000. However, counts as high as 12,000 to 15,000 are encountered. There is usually a moderate shift to the left in the Schilling count. Spinal fluid findings with the exception of an occasional moderate increase in pressure are always normal. The Weil-Felix reaction is the best criterion in the diagnosis, but even this procedure is probably not infallible, as cases have been reported that present all the features of typhus with the exception of a positive Weil-Felix agglutination reaction. Agglutination of Bacillus proteus x19 by the patient's serum begins in increasing dilution after the 10th day. A complete agglutination in a dilution of 1:160 is usually considered necessary to establish the diagnosis If serum taken at two-day intervals is originally negative, then becomes positive in increasing dilutions, such as 1:20, 1:40 and 1:80, this could be considered positive before the agglutination is complete in 1:160 dilution. The agglutination test is never positive in any dilution until after ten days. It seems that no one has made any reliable laboratory report before the earlier part of the third week of the infection, by that time the patient is well on the road to recovery or has recovered, and the family has worried you so much that more gray hairs have appeared in your head. So it is desirable to make his diagnosis of typhus fever from the first sign and the history given by the patient.

Endemic typhus may be differentiated from typhoid fever by the more sudden onset, the absence of positive blood and stool culture, and absence of the Widal reaction. Pneumonic plague, with its similar mental features, is easily ruled out by the relative mildness of the condition and the characteristic rash. In the preëruptive stages of typhus, influenza may be a confusing possibility. Encephalitis shows no rash, more gradual onset, and no relative bradycardia. Differentiation from Rocky Mountain spotted fever, eastern type, may be accomplished with absolute certainty by guinea-pig inoculation. Endemic typhus virus, when injected, produces only a febrile reaction after seven to ten days with none of the characteristic scrotal lesions of Rocky Mountain spotted fever.

Endemic typhus in this country is generally a mild disease with a mortality rate of from one to three per cent. It seems however, that this rate does not hold true when the reported case mortality is figured from the Public Health reports from the Southeastern states for the ten year period 1929 to 1939. There it is found to vary from a high of 80.6 percent in 1929 to a low of 3.06 in 1932. In 1937 there were 2,393 cases of endemic typhus reported in the U. S. with 142 deaths, a case mortality rate of 5.9 per cent in 1938; there were 2,233 cases reported with 137 deaths, a case mortality rate of 6.1 per cent. In the Southeastern states over the entire ten-year period there were 11,427 cases reported, with 611 deaths, a case mortality rate of 5.3 per cent. It is possible that these figures do not represent a true mortality rate, there being reason to believe that there is need for more specific criteria for diagnosis and more universal reporting of the milder cases. Fatal cases for the most part are confined to older patients who have myocardial or renal impairment. Acute myocardial damage and bronchopneumonia have been given as the cause of death in some cases. With the increasing number of cases occurring annually the possibility of the virus building up its virulence year by year has been suggested. However, the case mortality rate over a ten-year period studied shows no evidence of a regularly increasing rate.

The treatment of endemic typhus is purely symptomatic. Medication has little or no effect on the temperature elevation or duration. Hydrotherapy for the pyrexia and appropriate analgesia are the only measures having any beneficial effect. The disease appears to be self-limited, the temperature subsiding by crisis or rapid lysis on the fourteenth or fifteenth day. A moderate, persisting bradycardia and moderate, hypochromic microcytic anemia have been the only sequelae.

There has been quite a lot of research work done on the treatment of typhus fever in the last few years, in the view of the increased number of cases in the U. S. and the proof that the disease is transferred by the rat flea. There is a drive on at this time by the U. S. Public Health service to eliminate the rat. Why not clean up the rat-infested buildings and destroy the hiding-places of the rats? To eliminate typhus fever we must first eliminate the rats.

There has been a great deal of guinea pig experimentation to determine whether any sulfonamide has any beneficial effect in typhus fever. The conclusion is that these drugs are useless—no lesening of incubation periods, survival time, or the appearance of the scrotal reactions in the guinea pig.

There has also been a great deal of work done

in trying to make a vaccine, using typhus-infected fleas as a source of their virus. The fleas used were emulsified in salt solution after feeding upon infected white rats. The first vaccine was considered too weak; a second from emulsion of freshly infected fleas showed that there was sufficient virus in one fiftieth of a flea to infect a guinea pig. This vaccine was made so that each c.c. represented the virus from 20 fleas. Twenty-four guinea pigs were vaccinated; eight were tested for immunity to endemic typhus; two or three weeks after the vaccine was given six were found to be non-immune, one developed scrotal lesions only, and one showed fever the same day. The remaining 16 vaccinated animals were tested for immunity between two and three months after vaccine was given. Three were nonimmune; three developed fever without scrotal involvement; one had fever with doubtful scrotal involvement; four had no fever, and eight showed no evidence of typhus.

From these experiments carried out with the vaccine prepared from the flea containing a virus of low potency, the authors considered that a vaccine made from a virus as potent as that reported by them in which 128-thousandths of a flea contained enough virus to inject a guinea pig should give a high degree of protection.

So we shall live in hope that in the near future we may have a vaccine capable of preventing both epidemic and endemic typhus fever. Today epidemic typhus is taking its toll from the armies of Europe. Epidemic typhus fever has its place alongside the other major pestilences of Europe, such as famine, bubonic plague, cholera and smallpox, and today we have no treatment which we may depend upon for either the endemic or epidemic form.

ICE PICK IN THE SUPERIOR POSTERIOR MEDIASTINUM FOR 18 YEARS

(J. J. Lalich and G. M. Tice, Kansas City, in *Radiology*, Feb.)

A colored man, 30 years old, entered the University of Kansas Clinic June 29, 1939, with cardiac palpitation and substernal pain. He had been well until four months previously. Since that time walking always precipitated palpitation, substernal pain and dyspnea. A chancre on the glans in 1933, received treatment. He had a chronic cough, raised greenish phlegm with difficulty. Well nourished and slightly dyspneic. Pulsation visible in the suprasternal notch. The chest showed equal motility on the two sides. Cardiac rhythm regular, 70, faint systolic aortic murmur trans. into neck, b. p. 170/120. Wassermann and Kahn tests negative. Electrocardiogram showed insufficiency of the entire coronary circulation.

Eleven months following his first visit to the clinic, the patient complained of persistent dull chest pain in the posterior left axillary region, exaggerated by stooping, exertion, or coughing. Cough had become more persistent, sputum was slight. A friction rub in the left axillary area, with decreased vocal resonance in l. suprascapular region.

Fluoroscopic and roentgenographic examinations showed a stylet-like body 11 cm. long, overlying the upper chest structures, apparently in the anterior portion of the fourth dorsal vertebra; no evidence of inflammatory reaction. The aorta was moderately dilated and tortuous. A metallic body 1 x 0.3 cm., was also seen on the tip of the acromion process.

The patient recalled that he had been stabbed with an ice pick 18 years previously. He has been followed for two years; in that interval the hypertension has improved slightly, the cardiac symptoms have disappeared, and he has maintained his weight. Since there is no x-ray evidence of pulmonary or pleural inflammation and the patient continues to remain asymptomatic, surgery has not been recommended.

DRIED HUMAN PLASMA HELPFUL IN HEMOPHILIA

(J. B. Johnson, Washington, *Jour. A. M. A.*, for March 7.)

For many years it has been known that the plasma of normal blood contains a substance effective in reducing the coagulation time of hemophilic blood. Hitherto no practical method has been worked out by which the effective agent in plasma can be made generally available for therapeutic use.

The method reported involves the rapid drying of frozen plasma in a partial vacuum at a low temperature. Just before injection, the dried plasma is dissolved in physiologic solution of sodium chloride and injected into the vein of the patient. About one hundred injections of such plasma have been given to 5 patients without typing and in only one instance was there any reaction. This consisted of a chill and a rise in temperature lasting one hour. There was a prompt response to the injections.

A dose of 150 cc. of plasma reduced the coagulation time to normal. . . . The effectiveness of this type of plasma is maintained for at least three months when it is kept at 40°F.

HALITOSIS, TRUE AND FALSE

(R. Drosd & B. B. Crohn, New York, in *Amer. Jl. of Dig. Dis.*, Feb.)

Many who came for treatment for halitosis do not bear that condition. These patients usually suffer more mentally than do those who really have a bad breath. Many become inveterate smokers, others are constantly munching on scented mints or candy.

Persons with an offensive breath are rarely aware of it. At various intervals during the day, anyone may have a disagreeable breath. During sleep the reduced flow of saliva retards the normal cleansing action of the mouth and thus causes a somewhat disagreeable morning breath which is fairly universal.

Odoriferous foods eaten during the day appear readily on the breath. Most breaths have an unexplained stale odor just before meals when the individual is hungry. There is supposed to be a premenstrual disagreeable breath odor that lasts for several days. Constant smokers have bad breaths. If during one of these normal odoriferous periods a person be told that his breath has an unpleasant odor, he may be so psychically impressed that a symptom of a neurosis originates.

Halitosis depends probably on some fault in fat digestion and its intestinal absorption and splitting; or, perhaps in some fault in the hepatic reassembly of fatty acid radicals and soaps. In the course of this disturbance, intestinal or hepatic, volatile substances are absorbed into the circulatory medium and are excreted by the lungs on the expired air, tainting the breath.

Those who have the obsession that they are sufferers of a real halitosis when none exists require psychiatric investigaion.

To assure such an individual that he has no bad breath, is ineffective and creats suspicion and resentment.

President's Page

The Tri-State Association which has just finished its annual meeting in Greenville, South Carolina, has set up a standard of excellence that will tax the efforts of future officers and members to equal or surpass. From every direction come voluntary expressions of opinion as to the quality of the program and the close attention paid the speakers. Congratulations are in order to both Dr. Addison Brenizer and to our secretary-editor, Dr. J. M. Northington. Our thanks are also extended to the distinguished guests and members who made the program so worth while.

For the years 1942 and 1943, the Society expects to continue the excellent beginning already made. With its talented membership, this rather compact organization can extend its usefulness.

At the outset, would it not be well to have some definite aims for the year's work? First, the membership of half a thousand should at least be doubled. In the past ten years three out of every four new members of the Association have been brought in through the efforts of the secretary. Each year the membership has increased. How much more rapid will be this growth when each member shows his interest all the year. In the work of recruiting the secretary should have the all-the-year support of every member, and particularly are all officers and all those who have been honored by the Association obligated to lend a hand. To further this design, in each issue of the Journal, an application blank may be either printed or enclosed for convenience in this effort. The officers, present and past, will be counted upon to obtain new members and to stimulate more interest among those already members who have not availed themselves fully of all the Association has to offer. In the second place, the five medical schools within our borders could and would take a greater interest in the Association if properly approached. Politically, socially and professionally, these great teaching centers have a very great deal in common. The medical personnel in the three states which compose the Association have largely come out of these institutions. Through this medium all these colleges have a common meeting-ground.

Lastly, it will be the purpose to plan and work for a meeting in Lynchburg next February that will be too good to miss. Through the medium of our Journal, more publicity can be given to both invited guests and members that will appear on the program. A determined effort will be made to increase the attendance at the scientific session. Would it not be well to move the meeting forward about fifteen days to reduce the chance of snow and sleet making attendance difficult or impossible, as was the case in our meeting in this year, and in many, many other years?

The officers of your Association will be actively on the job throughout the year. It must be remembered, however, that we are a strictly voluntary and democratic organization. The incumbent officers can do but little without the active and enthusiastic coöperation of the whole membership.

—GEO. R. WILKINSON

PROCTOLOGY—Lackey
(From P. 144)

forceps catch hold of the wall of the vein and clip enough of the vein so that the clot can be easily removed, squeezing the clot out. There is little hemorrhage usually, and no sutures are necessary. I usually advise hot Sitz baths for a few days after this treatment. The patient will be very grateful to you for this simple office procedure for he gets immediate relief from his pain and is able to do about his affairs.

Pruritus Ani

As we all know, this is a terrifying condition. In many cases the cause cannot be determined. Total disability is not uncommon and over a long period. Patients sleep fitfully, awake scratching, and may lose much weight from worry and loss of sleep, not to mention embarrassment from just having to scratch in public. Diabetes should be looked for, also skin diseases such as fungus infections, which should be treated with suitable germicides. The many cases in which no cause can be found we have to treat empirically. A considerable number of men are reporting excellent results from injecting alcohol under the skin around the anus. Buie reports good success with this treatment. Its disadvantages are that the patients have to be hospitalized for a week or so and the treatment is painful. X-rays have been used with success by some. Others inject with distilled water and many other liquids. Injections with an anesthetic oil, such as Morgan's solution, afford relief in many cases. This is done with the patient either on a table or in a lateral Sim's position, the patient lying on the left side with left arm at his back and right leg flexed and left leg partly flexed. Either a head light or an ordinary floor light is sufficient. The patient uses his right hand to pull up on the right buttock to help give good exposure. Then using a 10- or 20-c.c. syringe with a 20-gauge needle, the needle is inserted at the outer border of the abnormal skin that is involved in the pruritus and passed under the skin inward to half an inch of the anus. No injection is made as the needle is being inserted. The injection of the oil begins as the needle is slowly withdrawn *to* the point of the insertion. The needle is *not* removed from the skin, but is again inserted in another direction and more solution is injected in the same way, this done in a fan-like manner until one side is injected through *only one* needle puncture of the skin. Usually about 10 c.c. is injected on one side; then the procedure is repeated on the other side of the anus. There is very little pain during this treatment and no local anesthetic is necessary. It is important not to inject the solution *into* the skin and not to inject too much solution in one place.

Usually the patient will get instant relief from the itching and no repeat injections may be necessary; but if all the itching is not relieved within a week or ten days more solution is to be injected into the areas where itching persists. Many patients get relief permanently with this treatment but if there be a recurrence it is usually several months or years doing so. Then the treatment can be repeated. This is an office procedure and the patients can continue with their daily work. Only occasionally is there a local reaction with swelling and in these cases hot Sitz baths and sulfanilamide by mouth for a few days will clear up the local reaction.

Another treatment for pruritus ani that gives good results is the injection of 5-per cent phenol in equal parts of glycerin and water. This solution is injected subcutaneously, inserting the needle at the lateral edge of the external sphincter muscle on each side. The external sphincter can easily be located by the finger feeling a hard ridge around the anus. About 10 c.c. of this solution is injected in a fan-like manner on both sides of the anus into the loose subcutaneous tissue. The patient should have no pain during the injection of the solution. If so the needle is either inserted too deeply or not deeply enough. When pain is felt the needle should be moved allowing the solution to flow in easily and no pain will be felt. Calamine lotion is used locally and the patient advised to keep the skin around the anus scrupulously clean. Cotton balls wet with some antiseptic solution such as 1-5000 potassium permanganate are good to use after each bowel movement, a wide-mouthed jar containing this solution and the cotton balls being kept in the bathroom for use when needed (Callaway). The patient is told that the scratching will soon stop and that he must put on gloves at night if necessary to prevent the scratching when he is asleep. A good, well-balanced diet, plenty of rest and sleep and freedom from worry is important in getting a cure. Frequently a sedative is advised.

Skin Tabs

Skin tabs may be removed in the office by excision after local infiltration with novocaine. A special clamp is a handy device for this procedure. The clamp is tightened and left on for a few minutes. Then the skin tab is cut off and usually very little bleeding results. It is well to keep the patient at the office for an hour or so afterwards to be ready to stop any bleeding that may occur. A little blood makes a big show and is very alarming.

Internal Hemorrhoids

A lot of our patients have "piles that come down." We should not get internal hemorrhoids

which are prolapsed to the outside confused with external hemorrhoids. Internal hemorrhoids are covered with mucous membrane, external piles are covered with skin. The treatment of internal hemorrhoids depends on the size and degree of prolapse, but many cases can be cured by injection. Some surgeons say all cases should have surgery. The injection treatment is appropriate to most cases, can be done by the general practitioner and is as scientific treatment as the injection treatment of varicose veins elsewhere. Recurrences occur once in a while; but injections can be repeated, and if necessary later surgery can be done. Recurrences are heard of after surgery also. The treatment is practically painless and with hardly any danger if done right.

This method got off to a bad start many years ago due to inexperienced hands and quacks using it. Many solutions are used. Among the most popular is 5-per cent phenol in almond oil or compressed cotton-seed oil. Quinine-and-urea hydrochloride has its advocates. These solutions are not injected into the veins, as we do in treating varicose veins, but outside of the veins in the submucous tissue of the hemorrhoidal mass. Most any kind of anoscope can be used. The patient is put in the left lateral Sim's position and with proper light the anoscope is inserted and the hemorrhoids are seen. The needle is inserted into the hemorrhoidal area under the mucous membrane and, before injection is started, the plunger is pulled back and if any blood is drawn into the syringe the needle must be withdrawn and reinserted. There is very little danger of being in the vein but this precaution makes one feel better. When the injection is started the hemorrhoidal mass will immediately bulge. There should be no blanching of the overlying mucous membrane; if so the injection must be stopped for we are injecting into the mucous membrane, and a slough may result. When using the phenolized oil usually 3 to 8 c.c. of the solution is injected into one hemorrhoidal mass depending upon the size. With quinine and urea hydrochloride usually 1 or 2 c.c. is sufficient. It is better to inject one hemorrhoid at a time at weekly intervals until the treatment is completed. Four or five injections are necessary depending upon the number of hemorrhoids present. No other local treatment is necessary and the patient can continue with his work.

Fissure-in-Ano

This painful condition usually requires major surgery sooner or later, but relief and sometimes cure can be given in the office. The complete rectal examination should not be attempted of a patient who has a painful fissure. If the doctor tries to pass his finger or an anoscope there will be so much pai nthat the patient will never forgive him. After relief is the time for a complete examination. In a case of fissure-in-ano which is very painful Morgan's solution injected into the base of the fissure usually gives immediate relief of the pain for several months and sometimes results in cure. The patient should be advised that in most cases this method of treatment is only temporary and that surgery will usually be required later. After the injection of the oil hot Sitz baths are recommended.

Perianal and Perirectal Abscess

Perianal and perirectal abscess can be opened in the office under a local anesthetic. It is imperative that the opening be wide, allowing free drainage. If this is not done fistulous tracts frequently form later requiring radical surgery. A common fault is to make too small an incision. Don't be afraid to cut. The wound is packed with iodoform gauze which is left in from 24 to 48 hours and then no further packing is necessary. If the abscess is very large, it is well to cut off a flap of the skin over the abscess site thus allowing freer drainage.

Most all cases of fistula-in-ano require radical surgery and must be hospitalized. Most general practitioners have hospital facilities now. Occasionally one will see a simple one-tract fistula around the anus which can be opened under local anesthesia in the office by putting a probe in the fistulous tract and cutting to the probe with a sharp knife, leaving the tract wide open to heal.

In closing, I entertain the hope that this brief discussion of rectal conditions will encourage more general practitioners to do much of the rectal work which they are capable of doing. For the greater part of it the main thing to be overcome is the mental hazard. Osler has said that a good doctor makes rectal examinations. May I add: and a better doctor cures his own patients of most of their anal and rectal ailments.

Discussion

Dr. W. C. Hunsucker, Bennetsville:

Dr. Lackey has brought us a very timely subject. His paper is well put; the facts are self-evident. There are two or three things I would like to bring up.

First, we have had some bad results from alcohol injections so bad that recently we have stopped using it because of one or two sloughs that were hard to explain to the patient and the end results, even without the sloughs, were not uniformly good.

Injection treatment of internal hemorrhoids is a standard procedure but we have not done it to the extent and with the results that the essayist reports. We have hospitalized the patients and used the ligation and excision method. We think the clamp and cautery method all right in certain instances, but ligation and excision gives you a clean procedure with open avenues for drainage. You don't have to worry about hemorrhage if the pro-

cedure is properly done and there is very little postoperative pain.

External tabs are routinely treated in the office. Fissures are very common over our section of the state, particularly among the colored population. These patients are uncoöperative, so we have to treat fissures usually by hospitalization and by using either caudal or general anesthesia. As a general rule they are treated by dilation and frequently by cauterization or excision, depending upon the nature of the lesion.

Most of us can do very good proctology if we remember that the anus is a very sensitive portion of the body, that it is always contaminated, that it is surrounded by circular muscles which cause spasm and prohibit drainage from our incisions.

(Discussion suspended because of arrival of hour for Clinics.)

RADIOLOGY

Drs. Lafferty and Baxter, *Editors*
Charlotte, N. C.

CANCER CONTROL IN LATIN AMERICA

James Ewing, New York, in *Bulletin of the American Society for the Control of Cancer,* for February.

In Rio de Janeiro public education in all departments of health is directed to Dr. Ugo Guimares who spent three years in a cancer institute in New York, followed by visits to Paris and Stockholm. He is particularly interested in cancer and has in operation a program well adapted to the very varying conditions in Brazil. In 1935 a special hospital in Rio was largely devoted to the study of the oxygen treatment of cancer on an elaborate scale.

In Montevideo I found Dr. Felix LeBorgne conducting a well organized cancer service in the City Hospital and building himself a million volt X-ray machine. The new sky scraper hospital of Montevideo is well equipped for modern cancer therapy. This country has long enjoyed a broadly organized program of public education in cancer.

Buenos Aires abounds in evidences of organized cancer education and in facilities for treatment. Dr. Domingo Mosto is the head of a Cancer Committee composed of representative physicians, laymen, and women, who carry on programs of education, support hospitals, and influence legislation. Under French influence was erected a splendid marble edifice devoted exclusively to the treatment of cancer by radiation. They are now recognizing that the special cancer hospital should unite all methods of treatment. Dr. A. H. Roffo, with untiring energy and government support, has built up one of the most extensive cancer institutes in the world, of which Argentina may well be proud. It consists of nine separate buildings for service and research and its activities cover every part of the cancer field. The latest addition is a luxurious private patient's pavilion.

The pathologists are all on part time and make their living mainly by outside activities which they pursue with astonishing industry. All that I met were thoroughly trained, and eminent in their special fields. Hospital endowments are inadequate to provide proper salaries and the governments, which provide free care for all indigents and workmen, have not yet seen fit to meet the needs of full time hospital pathologists.

Medicine in Chile and Peru shows the advantages of centuries of Spanish culture and decades of vigorous pursuit of modern science by virile, intelligent, conservative, and self-reliant people. Dr. Leonardo Guzman, surgeon, radiologist, widely travelled cancer authority, Minister of Health, and man of affairs, conducts a cancer service of the highest type, competently organized in a large hospital. The great medical need in South America is a new cancer hospital in Santiago. The medical profession of Chile has for years conducted their own cancer congress and the volumes of transactions would do credit to any country. In the science departments of the University are many men of eminence.

Lima, beautifully situated on a broad plain on the ocean front, speaks refinement and comfort. Peru has enjoyed centuries of culture, attested by the presence of the University of San Marcos, the oldest university in the Western hemisphere, founded in 1583. Accordingly, Peruvian medicine is on a high plane, and fortunately its institutions are well and sometimes elaborately built and equipped. The new hospital Obrero, 1500 beds, is the last word in hospital construction and organization. The alert Minister of Health, Dr. Constantino J. Carvallo, has just opened a handsome marble and granite cancer hospital and institute, in which he combines all methods of service and is developing a research staff. Excellent facilities and staffs are found also in the famous Hospital Loyaza, and in the new Obrero. Cancer education has long been a favorite problem of Dr. Carvallo.

No reference to medicine in South America should fail to acknowledge the inexhaustible and discerning hospitality which the doctors and their families are showing to the many visitors from North America. South American doctors and scientists may well visit the United States for the advantages of certain of our educational institutions; we in North America may well travel to South America to learn certain refinements in hospitality and good manners.

Tuberculosis and tropical diseases constitute the chief problems. Against cancer the educated classes enjoy a degree of protection which compares favorably with other countries, but one can hardly expect much progress with the illiterate classes.

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Official Organ

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As is true of most Medical Journals, all costs of cuts, etc., for illustrating an article must be borne by the author.

TRI-STATE GREENVILLE MEETING

EVERYONE, and there have been many, who has expressed to the secretary an opinion on this meeting has commented on the excellence of the program and the close attention paid the speakers.

A good many have brought up the subject, an old one with us, of moving our meeting date forward to about the middle of March, so as to get away from the very worst weather of the year.

All of us remember the sleet and snow we have encountered at Charlotte, Richmond, Greensboro and Charlottesville. These experiences, added to that just had at Greenville, would appear to demand the change, unless it should turn out that too many of our members must attend some other meeting already set for that time.

Every member is urged to write the secretary, giving his opinion.

Our new president takes vigorous hold of his job and with the first issue of the journal following his taking office outlines a plan of action for the Association for the next year. Our prediction is that we will continue to move forward, and at accelerated speed.

MEDICAL LIGHT AND LEARNING OF THE NORTHWEST OF 1870-1890

THE ISSUE for February of the *Journal-Lancet*, Minneapolis, reprints a number of articles contributed many years ago to the *Northwestern Lancet*.

Most of these articles contain information which, for various reasons, will interest every intelligent doctor. In many of them may be found points in diagnosis and treatment that will help us right now. All of them show an ability to think logically and express accurately, which, were it not that we are so well satisfied with our own meager attainments in this realm, would put us to shame.

"Rubber Gloves in Surgery" was the subject of G. G. Eitel, Minneapolis, in the issue for Jan. 1st, 1900.

About two years ago the writer adopted the use of rubber gloves in all abdominal operations, as well as in all other cases where he wished to be certain against infection, and he is pleased to state that not a drop or pus or any sign of infection has occurred in his practice since that time. If the gloves are handled with care they can be used in from 20 to 30 operations, extending over a period of two or three months.

For sterilization, the gloves are wrapped in a towel or piece of gauze and placed in the sterilizer, together with the instruments, and thoroughly boiled in plain water for 15 minutes. After the hands have been cleansed same as though the operation were to be performed with bare hands, the glove well filled with water is picked up by the margin of the gauntlet, when the hand is easily slid into it. The outside of the glove should never be touched with the bare hand after the glove is sterilized. The hands with

which the glove is touched should be covered with a sterilized towel.

If during an abdominal operation an abscess be encountered, the gloves should not be removed for two reasons: First, the pus may be sterile, and if this be so, the operator may with uncovered hands infect his patient, just the same as though there were no pus; second, if the pus contain microörganisms the surgeon may himself become infected.

Gloves should be worn in all operations upon patients suffering from active syphilis and tuberculosis. In obstetric practice the examining hand should be covered with a glove, also placing the extracting forceps, or guiding the craniotomy instruments, and removing blood clots from the uterine cavity.

Rubber gloves have come to stay, and will come into more general use as their virtues become more appreciated.

How good a prophet was Dr. Eitel!

"Warming and Ventilation" was ably discusstd by Dr. S. A. Brown, Sioux Falls, Dakota, in the issue for April 1st, 1886.

The sweet air of Dakota has the important quality of being hostile to the germs of disease. A person suffering with consumption will live longer here than in any other part of the world and frequently regain his health altogether. But, during the winter time, we contrive in our homes many elements of a hurtful climate.

First get a high and dry location; lay the foundations deep, so as to prevent the frost from getting beneath, when the frame is up shelter it with matched flooring. The ordinary sheathing used in building is a delusion and a snare. In laying the floors carry them out between the studding and the sheathing, so that the air cannot move up and down past any floor. Then back-plaster between the studding so as to divide the dead air space into two equal parts. The more dead air space you can have between the interior of your house and the weather the warmer you will be. Wall paper is a useful agent in the economy of heat. A good deal of heat gets away through plaster.

Every outside doorway must have a vestibule contrivance by which one door can be closed before the second is opened. Every window must have a storm sash, as a single window carries off four times as much heat as a double window, and 20 times as much as the same space of wall, allowing that the single window is air tight, which it so seldom is.

The part of the house which cannot be warmed must be disused.

Every part of your house must have the temperature most congenial to the human constitution, and fresh air in abundance and constant supply is essential to the preservation of health, within doors or without.

By constructing a foul air shaft from a register near the floor in each room, and connecting it with a flue built in the chimney, we get from the smoke and air which arises from the fires all the heat required to operate it successfully. A gas jet burning in the bottom of a shaft connected with a cold room will cause the ascension of 1.000 cubic feet of air to each cubic foot of gas consumed. It is difficult to convince people that warm air may be fresh air.

Of all the appliances used for warming houses, the popular fuel-economizing base burner is the least in harmony with the principles of sanitary heating. One considers himself fortunate if, through some opening, the poisonous gases which are generated so freely in the combustion of anthracite coal does not escape and poison his family. How often it is that the physician is called in the night to a family, several of whose members are insensible from suffocation with these gases.

The open fire has a great advantage as a ventilator, removing from six to 10,000 feet of air per hour when the chimney throat is large, but this air must be replaced by cold air from without. It is veryextravagant of fuel, only ⅛th of the heat produced being utilized.

Heating by steam or hot water, ventilation is independent of the heating apparatus. Any fresh air which is obtained comes in cold from without. Both of these methods are excellent when the fresh cold air is conducted from the outside into a box containing the steam or hot water pipes, and by circulating amongst them is heated before passing into the room.

The hot air furnace heats and ventilates a house evenly, successfully and economically. It will send no warmth to any part of the house where the ventilator is closed.

The best method of heating is the floor-warming system. In this the air is warmed in a hot-air furnace and conducted to the spaces between the sleepers or joists under the floor, and, after circulating through all the spaces beneath the floor, is admitted through a register, being withdrawn from the room by a shaft when it has been used. In all other methods the floor is the coldest part of the room, in this it is the warmest.

A cubic foot of air at zero can contain 1/5th grain of moisture, heated to 80° it can contain 60 times as much. Whenever the temperature within doors is much higher than without, the air is in a too thirsty state and parches the skin and lungs, unless means be taken to supply moisture. An evaporating pan or other contrivance for supplying moisture is essential.

If you make an underground channel deep enough and long enough, and pass air through it, the air will issue from the channel at a temperature above the freezing point, whatever its temperature may have been on entering. You save from 1/3rd to 1/2 of your fuel during the coldest weather. This system may be applied to the smallest house, and thus procure systematic ventilation at a cost not exceeding what is now spent for heating without ventilation, whilst great economy in health and vigor is obtained. A house may be kept pleasantly cool through the hottest weather, as the system furnishes air at 50° during the summer.

Only those who have had experience of such weather can fully appreciate Dr. Brown's essay. All of us can admire his practical knowledge of physics and applaud him for recognizing all through that cold has no positive existence, that it is absence of heat, just as darkness is absence of light. Who would have thought that in the Northwest it was ever a common thing for families to be asphyxiated by gases from a stove? Who would have thought Dakotans had anthracite to burn? How arresting that some of these folks had cool air in their houses all summer from caves made to provide comfortable air winter and summer!

The Editor wrote in advocacy of "Sun Baths" in the issue for Sept. 1st, 1882—60 years ago.

The profession is beginning to appreciate the great part which the sunbeam performs in the economy of animal, as well as vegetable life, and now, it is not at all unusual to hear of patients being regularly subjected to sun baths. Kilpatrick's blue-glass craze disgusted the profession with the folly and credulity of the public, and the whole matter of sunbeam treatment was abandoned. Now numerous

physicians are availing themselves of that potent factor in the treatment of anemia, in conjunction with rational diet and haematics. Let the anaemic lady's couch, or the child's crib, be wheeled to the window, where in a state of perfect nudity, with the head only in the shade, the sun can blaze in, and thoroughly tan the hide into good health tawniness, when it will absorb the sun's rays, and will rubify the blood that has hitherto refused to redden up under long-continued courses of iron, quinine, and nitrogenized ailments.

The Editor had not got as far as knowing that the ordinary glass screens out certain beneficial rays, but he knew the truth of the old belief that when you take iron you should be much in the sun; and he would not allow the claims of some that sunlight was a cure-all to make him lose sight of its real value.

There is information as well as entertainment in an article on "Antiseptic Surgery at the New York Hospital by Dr. E. C. Spencer, St. Paul, in the issue for Nov. 15th, 1884.

Listerism as once taught is now dead. Two-and-a-half years ago his method was followed out to the letter at the New York Hospital. The results were good, but there were drawbacks. The carbolic acid caused excessive discharge, rendering frequent dressings imperative. It was disagreeable to the operator, not infrequently poisoned the patient, and quickly evaporated from the gauze dressings. The carbolized oil catgut ligatures were stiff and hard to tie, and often loosened. Carbolized oil was proven to be frequently alive with bacteria. Then chromicized sulphurous-acid ligatures were used, but they caused abscesses and would not be absorbed. The spray was a nuisance.

Instead of carbolic acid came the sublimate solution, carbolic acid being still used for the instruments. The customary strength is 1:1000, though once a 1:100 solution was used by mistake in a large wound and primary union followed. No symptoms of mercurial poisoning have ever occurred, though abscesses, joints, and the pleural cavity have been frequently washed out with the 1:1000 solution and the puerperal cavity with 1:5000. A solution of boric and salicylic acid is also used for irrigating wounds during the operation, as it has no bad effect on the instruments. A solution of turpentine in alcohol (1:16) is used for washing the skin before an operation. Iodoform is generally used in lacerated wounds, and small quantities are placed over the lines of incision in operative wounds. I saw one case of poisoning, the symptoms of which ceased when the cause was removed. The ligatures were formerly made by immersing the catgut in a 1:100 solution of bichloride for 24 hours and keeping in absolute alcohol. These were too stiff. Strong and pliable ones are made by soaking the catgut for 24 hours in oil of juniper and keeping in alcohol. Drainage tubes are of black rubber, kept in a 1:20 carbolic solution; or decalcified bone kept in alcohol, or alcohol and glycerine. Drains of spun glass or horse-hair, which act by capillarity, are especially good in large scalp-wounds.

The materials used for dressings are gauze, jute, wood-wool, moss, sawdust, absorbent cotton, and peat. The gauze is freed from sizing by washing in a soda or potash solution, then immersing in a bichloride solution and drying. Complete drying is retarded by adding glycerine to the solution, and common salt is added to prevent the change of the sublimate into calomel.

The sawdust, peat, etc., are enclosed in small bags of various shapes and sizes, and about an inch thick, and are packed about the wound, exerting pressure where necessary and soaking up and keeping sweet the discharges. The jute and cotton make a comfortable dressing of considerable elasticity and of some absorptive power. Wood-wool and sawdust absorb rather better, but cannot take up pus at all well. Peat or turf mould is the most generally useful material.

Does this trouble pay? In the summer of 1882 the attending surgeon thought not. Before the fall the wards were full of cellulitis and erysipelas. But few capital operations were performed. Finally he refused to operate at all and even took some of his cases to other hospitals. A new man came who thought it did pay. He paid closest attention to every matter of detail. We thought him a fanatic but as the old cases of cellulitis and erysipelas recovered or died, no new ones appeared in their stead. Quinine, and lead and opium wash fell into disuse and the house surgeon's occupation of making counter openings and squeezing out "laudable pus" was gone. Over a period of 18 months I never saw a case of erysipelas or pyemia develop from an operative wound.

Dr. Spencer has much to say of developing surgical methods that will instruct and inspire. Who among us knew of the use of moss, sawdust and peat as dressing material for wounds? How well he put in a paragraph the case for the new method against the old!

The contribution on "Diabetes Mellitus," by Dr. C. W. Drew, Minneapolis, to the issue of June 1st, 1886, has pertinent information not to be found in Osler's *Modern Medicine*, of 1907.

Dr. Richard Schmitz (*British Medical Journal*) states that of 600 cases of diabetes treated by him, "248 were in families in which diabetes had already appeared; 96 were in neuropathic or psychopathic families, and in 183 cases the disease was to be attributed to some acute disturbance of the nervous centers. In 153 cases the disease was attributed to an excessive indulgence in sugar."

The specific gravity of the urine is rarely below 1035 and frequently reaching 1050 or 1060, and cases are upon record in which a density of 1070 was observed.

The blood upon a chemical examination shows the presence of glucose, *an average of from 0.2 to 0.5%* being found.

Of diabetic patients nearly or quite 50% suffer from pulmonic phthisis.

A case is reported in which the supposed duration was only five days, and there are many on record in which a fatal result followed after a few weeks of illness. In general one to three years pass before death takes place; in exceptional cases death may be delayed for 10 or more years.

The treatment consists in a dietary from which starch and sugar have been as nearly as possible eliminated. Under such a regimen in some cases the sugar will rapidly decrease and even disappear, but in a larger proportion of cases the diminution is much less marked. Among drugs none has stood the test of experience..

How could it have come about that once it was learned that in diabetes the sugar of the blood is 0.2 to 0.5 per cent, and yet, the greatest book on medicine, coming out 21 years later, have no sentence indicating that any value was attached to this test, for diagnosis or treatment?

How bad the "Feeding of Infants" was may be learned by an article by Dr. Hiram Corson, of Pennsylvania, in the issue for February, 1871.

To babies who are not breast-fed the rule seems to be to give one-third milk and two-thirds water—and *seven out of every eight* of the little creatures perish within a few months after their birth.

Suppose that a child can take only 3 half-pints of fluid into its stomach in a day, and 2 half-pints of it are water, it will then only get 8 ounces of milk, when it needss 24 or 32 ounces daily.

Many children are thus starved and dosed to death.

My plan is to direct as much milk as the child can take, and as often as it wants it; but always of the temperature of the mother's milk. In winter or when milk is kept in a deep cave, or in a spring-house, I direct that as much boiling water be added to it as will bring it to that temperature. It takes but very little water, and is more convenient than heating it over the fire. To a pint of cool milk two tablespoonfuls of boiling water, the whole then well sweetened. Some children at one month will take more than a quart daily.

If, then, in the country, where the milk is good, a child of a month needs nearly a quart daily, without dilution, how very important that no water shall be added to the milk brought to the city by milkmen!

In 1871, Dr. Corson's feeding of infants evidently was way ahead of that of the ruling powers in this field of a third-of-a-century later. He was a practical man. Note his comment on the milkmen.

SACCHARIN INSTEAD OF SUGAR

The Edition of Sollman's *Pharmacology* just off the press brings authoritative information on a subject of general lay interest.

Practically all saccharin taken in passes out of the body within 24 hours, unchanged. Five grains per day taken for months produces no injurious effects. An intake of ten to twenty grains daily is harmless except for an occasional minor disturbance of digestion.

For purposes of sweetening a half-grain is the equal of an ordinary lump of sugar—5 grains of saccharin=10 lumps sugar. The sodium salt of saccharin is as sweet as saccharin itself and is much more soluble. It is most used, marketed under the name "soluble saccharin."

Long-continued use tends to cause a somewhat unpleasant after-taste. This can be obviated by use of a few drops of lemon juice.

Here is a ready means for the fat to get their sweetening in these days of sugar restriction and, as a by-product, get rid of a good deal of surplusage.

An Outline of the Treatment of Fractures, by The Committee on Fractures and Other Traumas of the American College of Surgeons, is available on writing the College, 40 East Erie Street, Chicago.

This is a brochure of great intrinsic merit. All doctors in practice have occasion to see fractures, and it is to the immense advantage of patient and doctor that a fracture be neither neglected nor mismanaged. Further, a doctor being able to show familiarity with the book on the subject put out by the American College of Surgeons will tend to save him from being sued when, once in a while, through no fault of his, the result is not perfect; or, failing to prevent suit being brought, this familiarity will favorably impress judge and jury.

COURSE IN OBSTETRICS AND PEDIATRICS

NO TUITION: FREE BOARD AND LODGING

The Letter which follows has been sent every General Practitioner in North Carolina so far as is known to the State Board of Health:

The State Board of Health, Duke Hospital and the North Carolina Medical Society are again offering postgraduate training in Obstetrics and Pediatrics for General Practitioners. These courses made available by appropriations from the United States Children's Bureau will last five days, Monday through Friday, and will be repeated weekly through the spring and summer or as often as there is a demand.

The classes are to be limited to a minimum of four and a maximum of six physicians a week. The course will be informal, clinical and practical —no examinations given and no certificates issued. The courses will be conducted by Dr. A. W. Makepeace and Dr. Robert B. Lawson of the Departments of Obstetrics and Pediatrics of Duke Hospital.

No expense attaches to these courses. Meals will be furnished in the doctors' dining room at Duke Hospital, rooms in the graduate dormitory on the Duke campus—if you stay for the entire course. We do not want doctors to come and stay only two or three days.

It is hoped that at least one group of physicians from every local Medical Society will attend these courses. We request that every health officer attend these courses and bring along several general practitioners with him, especially those who have been conducting maternal and infant centers.

This course last year was attended by 111 physicians. The many favorable comments received indicate that our primary aim was achieved—to give an intensive practical review of the management of the problems of obstetrics and pediatrics in practice.

All applications should be cleared through this office to avoid confusion. These courses will begin March 23d, 1942, and will run through May with the exception of the weeks of April 6th-10th and May 11th-15th. The courses will not be given in June but will be resumed again in July. Get your

applications in early to make certain that you and your group can attend the courses during the week most convenient for you.

G. M. COOPER, M.D., Director
Maternal and Child Health Services
W. C. DAVISON, M.D., Dean
Duke University School of Medicine
F. WEBB GRIFFITH, President
North Carolina State Medical Society

CONQUERING OF GAS GANGRENE INDICATED

Two reports indicating that gas gangrene, one of the deadly foes of the wounded, may be conquered, are contained in the February issue of *War Medicine*.

Sarah E. Stewart, Bethesda, Md., announces the development of a toxoid effective in immunizing guinea pigs against the most common of the three types of organisms generally involved in gas gangrene.

Sulfanilamide or one of its derivatives has been found to successfully control experimental gas gangrene in guinea pigs. G. B. Reed, Ph.D., and J. H. Orr, M.D., Kingston, Ont., report in another paper in the same issue of *War Medicine*.

Dr. Stewart reports: "In view of the marked progress which has been made in immunization against diphtheria and tetanus by use of their respective toxoids, it seems reasonable to believe that success could be attained against gas gangrene."

Toxoid is the toxin secreted by an organism, the toxicity of which has been destroyed but which is still capable of inciting the formation of antibodies.

During the first World War, the highest figures were always observed when the wounded were not collected with the usual rapidity and treatment was delayed. Since the gas gangrene anaerobes grow rapidly, death may ensue within a few hours of injury. It is essential, therefore, if immunity to this type of infection is to be present following injury, that it be built up before the injury occurs.

Dr. Stewart developed a Cl. perfringens toxoid which was found when injected into guinea pigs to produce an immunity against many times the minimum lethal dose of a culture of this bacteria.

Drs. Reed and Orr say of the efficacy of sulfanilamide or its derivatives the primary objective was not to find a cure for gas gangrene, but a simple method of retarding the development of this infection until such time as a wounded man could be subjected to the surgical or medical procedures.

"The results appear to demonstrate that sulfanilamide and its derivatives, especially sulfathiazole, introduced early into infected wounds have a marked retarding effect. . . ."

THE PANCREAS A MOVABLE ORGAN

(C. A. Beling *et al*, Newark, in *Amer. Jl. of Dig. Dis.*, Feb.)

During the past two years we have seen two patients with disseminated calcification of the pancreas. After examining numerous films of the pancreas in both cases, we became interested in the variations in the locationss of the organ. Additional roentgenograms were then taken with the patient in various positions.

Röntgenograms made of two patients with disseminated calcification of the pancreas placed in several positions show that the pancreas is a mobile organ.

The length of two lumbar vertebrae is the full extent of vertical movement. The organ may move completely from the right to the left side of the vertebral column.

NIACIN has been adopted as a new name for Nicotine Acid, this because of unpleasant associations with the word nicotine.

NEWS

NORTH CAROLINA NEUROLOGIC AND PSYCHIATRIC ASSOCIATION TO MEET

Friday, March 27th, 1942, Charlotte

President—Dr. Archie A. Barron, Charlotte
Vice President—Dr. F. B. Watkins, Morganton
Secretary-Treasurer—Dr. Burke Suitt, Durham
Medical Library—Professional Building
Business session 1:30 p. m.
Scientific session 3:00 p. m.

Clinico-Pathological Conference—Dr. Paul Kimmelstiel and Dr. Archie A. Barron, Charlotte.

What's the Diagnosis? Case Reports

Conditions to be Considered: Vascular Hypertension, Cerebral Hemorrhage, Cerebral Arteriosclerosis, Uremia, Encephalitis, Brain Tumor, Brain Abscess.

Discussed by: Dr. Robert Graves, Duke University, and Dr. Frederick R. Taylor, High Point.

Anxiety States—Dr. Ignacio Matte, Duke University.

Discussed by: Dr. James Watson, Director of Mental Hygiene, Raleigh, Dr. Willard Cardwell, Greensboro, and Dr. J. A. Rose, Bowman Gray School of Medicine.

An Evaluation of Emotional Factors in Neurodermatitis—Dr. Maurice H. Greenhill, Duke University.

Discussed by: Dr. W. B. Mayer and Dr. D. G. Welton, Charlotte.

Social and Dinner Hour, 6:00 p. m., Hotel Barringer. $2.00 per plate.

The Structural Basis of Psychiatry—Dr. B. J. Alpers, Professor of Neurology, 8:00 p. m., Medical Library.

DR. CARL V. REYNOLDS
DR. GEORGE M. COOPER

At the Annual Dinner of the Birth Control Federation of America held at New York in January citations for "distinguished service in the advancement of human welfare" were awarded to five persons—two of them the North Carolinians whose names head this paragraph.

Of Dr. Reynolds it was said:

"Under his direction North Carolina has become the first state in the union to make planned parenthood a part of its public health program. Such assistance is now given in over half the counties of the state through maternal health clinics with results which are definitely beneficial."

Dr. Cooper's citation told of his services as a country doctor with the problems of the poor, his work for birth control, and concluded, "in a year when human lives are counted cheap we honor a physician who holds them dear."

GRADY ROSS, D. D. S., Charlotte, announces that April 1st, his practice will be limited to Oral Surgery, Exodontia and Radiography.

DR. ROBERT T. ODOM announces the opening of offices in the Nissen Building, Winston-Salem. Practice limited to surgery.

DR. H. H. WARE, JR., of Richmond, is the new president of the Virginia Conference on Family Relations, succeeding Judge J. Hoge Ricks, of Richmond.

DR. PAUL W. BOWDEN, M.S. in Public Health, now Acting Health Officer of Charlotte County, Va., has been appointed Epidemiologist for the City of Richmond, at a salary of $5,000.

MARRIED

Dr. Joseph T. Wyche, Hallsboro, N. C., and Miss Elizabeth Calder, Charlotte, March 14th.

Doctor Thomas Williams Baker, of Charlotte, and Miss Margaret Mesley Lunsford, of Durham, March 28th.

Dr. Edmund Mosely La Prade, of Richmond, and Miss Ann Page Walker, of Hanover County, Virginia, were married on February 28th.

Dr. Benjamin W. Rawles, Jr., and Mrs. Helen Hodges James, both of Richmond, were married on February 22nd.

UNIVERSITY OF VIRGINIA

At the meeting of the Fourth District and Southside Virginia Medical Society at Petersburg, on December 30th, Dr. David C. Wilson presented a paper on The Early Diagnosis of Mental Disease.

Dr. Edwin P. Lehman presented the Hodgin Lecture of the St. Louis Surgical Society before the St. Louis Medical Society, at St. Louis, Mo., on January 13th. His subject was Heparin and Inflammation, with Particular Reference to Peritoneal Adhesions.

Dr. Eugene M. Landis spoke before the Stuart Circle Hospital Staff at Richmond on January 14th. His subject was Practical Aspects of Tests of Kidney Function.

On February 11th, Dr. David C. Wilson presented a paper before the meeting of the Mid-South Post-Graduate Medical Association at Memphis, on the subject Practical Methods of Diagnosis in Nervous and Mental Diseases. On February 12th, Dr. Wilson spoke on the same subject before the Hamilton County Medical Society, at Chattanooga.

Dr. E. C. Drash presented a paper before the Society of the University of Surgeons, meeting at Cincinnati, on February 13th. His subject was The Treatment of Impenetrable Esophageal Strictures by a Combined Intraesophageal and Extraesophageal Approach.

Dr. Francis M. Rackemann of Harvard University spoke before the meeting of the University of Virginia Medical Society on February 13th. Dr. Rackemann's subject was The Asthma Problem.

"NEPHROSIS" is not a disease, and precise definition is required when the term is employed.—*Moschowitz.*

REJUVENATION.—From a book of 1600 B. C. is translated: "When the flesh is smeared with [a certain ointment] it becomes a beautifier, a remover of blemishes, of all disfigurements, of all signs of age."—*Zeman.*

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PAIN

The majority of the physicians in the Carolinas are prescribing our new tablets

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Analgesic and Sedative 7 parts Aspirin 5 parts Phenacetin 1 part Caffein

We will mail professional samples regularly with our compliments if you desire them. Carolina Pharmaceutical Co., Clinton, S. C.

BOOKS



DIABETES MELLITUS, by ZOLTON T. WIRTSCHAFTER, M.D., Clinican-in-Charge, Clinic for Diabetes, Department of Medicine, Mount Sinai Hospital, Cleveland; and MORTON KORENBERG, M.D., Former Fellow, May Institute of Medical Research, The Jewish Hospital, Cincinnati. *The Williams & Wilkins Company,* Mount Royal & Guilford Aves., Baltimore. 1942. $2.50.

The great number of cases of diabetes, and the great difference in the results of *best* treatment and second-best or poor treatment, combine to make it obligatory on all doctors of the whole patient to keep conversant with the *best* means of management. This book supplies the information without waste of words and time.

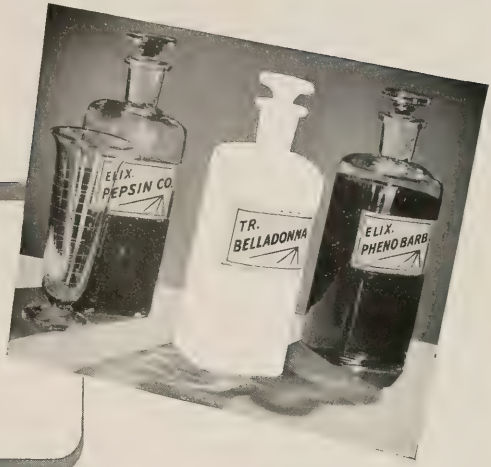
THE CONDENSED CHEMICAL DICTIONARY: A Reference volume for all requiring quick access to a large amount of essential data regarding chemicals, and other substances used in manufacturing and laboratory work; third edition, completely revised and enlarged, under the supervision of THOMAS C. GREGORY, Editor. *Reinhold Publishing Corporation,* 330 West 42nd Street, New York City. 1942. $12.00.

The title, with amplification, gives an excellent idea of the uses the book will subserve. Anyone in medicine, who tries to keep a speaking acquaintance with the developments in chemotherapy, acutely and daily needs information obtainable from this Chemical Dictionary, and readily obtainable from few other sources.

An idea of how complete is the book may be gained from the fact that there is section on Shipping Regulations and another on Effects of Wartime on Chemical Prices.

A MANUAL OF PHARMACOLOGY, by TORALD SOLLMANN, M.D., Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Cleveland. Sixth Edition, Entirely Reset. 1298 pages. *W. B. Saunders Company,* Philadelphia and London. 1942. Price $8.75.

Doctors confused by extravagant and conflicting claims of usefulness made for a great many remedial agents look forward to the periodic appearance of this authoritative book. The great recent additions to knowledge of the usefulness of the sulfonamides; certain antimalarials, anesthetics and hypnotics; convulsants and anticonvulsants; synthetic autonomic agents; hormones and vitamins, are set forth in a soundly critical way. The policy of describing all preportions included in the U. S. and the British Pharmacopeias has been abandoned.



Don't Worry Too Much About This Shortage

A LARGE PORTION of this nation's Belladonna supply was formerly imported from the European countries whose shipments to our shores have now ceased. Atropine and Belladonna have since become extremely scarce—in many sections of the United States costs have reached rather high levels.

Fortunately, however, there need not be too much concern over this shortage. Syntropan the 'Roche' synthetic, non-narcotic antispasmodic is being produced in adequate quantities and is available to the entire medical profession. Many physicians consider the action of Syntropan 'Roche' superior to that of Atropine or Belladonna, and of much importance, the use of Syntropan affords greater *safety*—less likelihood of mouth dryness, mydriasis, or tachycardia. In other words in relation to its activity Syntropan 'Roche' is less toxic than Belladonna and its derivatives.

Try Syntropan in the place of Atropine or Belladonna, to effectively control smooth-muscle spasm—*in spastic disorders of the cardiovascular system* such as arterial spasms, angina pectoris, and effort syndrome; *in gastro-intestinal disorders* for the relief of spasms due to hyperacidity and peptic ulcer, and pylorospasm; *and in uro-genital disorders* for the relief of spastic states of the bladder and ureter musculature. One 50-mg. Syntropan tablet in the place of 1/120 gr. (0.5 mg.) of Atropine Sulfate is recommended. Packages: Oral tablets (50 mg. each) in tubes of 20 and bottles of 100; 1cc ampuls (10 mg. each) in boxes of 6.

HOFFMANN-LA ROCHE, INC., NUTLEY, N. J.

Hoffmann-La Roche, Inc., Nutley, N. J.

Gentlemen: I should like to receive a professional sample of Syntropan, the 'Roche' synthetic, non-narcotic antispasmodic.

Dr._____

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SMS 342

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SYNTROPAN

'ROCHE'

The Better Antispasmodic

There is to be found no better source of knowledge as to what the different remedial agents the market affords may be depended on to do.

MEDICAL GENETICS, by Laurence H. Snyder, Sc.D., Professor of Medical Genetics, The Ohio State University. A Series of Lectures presented to the Medical Schools of Duke University, Wake Forest College, and the University of North Carolina. *Duke University Press,* Durham, N. C. 1941. $2.50.

We do not know how to breed just what we want in humans. We do know a great deal as to how not to breed what we do not want.

This book will serve the physician well in diagnosis and prevention of heritable diseases and malformations, in giving proper advice to those contemplating marriage and childbearing, and, now and then, in determining the paternity of children in cases coming under dispute. It will be serviceable to teachers and students of genetics in pointing out the practical applications of heredity in human beings.

Dr. Snyder's book could be used as a text in our high schools to the great advantage of us all.

ANGINA PECTORIS: Nerve Pathways, Physiology, Symptomatology, and Treatment, by Heyman R. Miller, M.D., Associate Attending Physician, Montefiore Hospital, New York City. *Grune, Stratton, Inc.,* 443 Fourth Ave., New York City. 1942. $3.00.

The author offers a new book on heart pain, making no claim to having found the solution of the fundamental problems involved, but to restate and analyze them anew in the light of all the knowledge we *now* have. His description of the pain which gives this syndrome its name is a gem of expression in language. The anatomical pathways for the transmission of cardioaortic pain are traced with great care and an abundance of diagrams supplement the text, the whole to constitute a clear teaching of this feature so necessary for an understanding of angina pectoris.

No justification is found for the term, pneudoangina. Non-cardiac causes of pains which may be readily mistaken for those of angina are said to be numerous. Many such pains are accounted for.

The non-surgical treatment is aimed mainly at the relief of pain and the prevention of its recurrence. Frequent repetition—in 10 to 15 min.—of injections of morphine is directed. Rest is the prime essential—even to deferring the evacuation of a full bladder or rectum. Doctor and nurse should be on the lookout for signs of heart failure and at the first sign of pulmonary congestion or edema prompt and energetic measures must be instituted to combat these conditions. Venesection is sometimes life-saving.

BIPEPSONATE

Calcium Phenolsulphonate	2 grains
Sodium Phenolsulphonate	2 grains
Zinc Phenolsulphonate, N. F.	1 grain
Salol, U. S. P.	2 grains
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Average Dosage

For Children—Half drachm every fifteen minutes for six doses, then every hour until relieved.
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Manufacturing Pharmacists Established in 1887

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MODIFYING NICOTINE INTAKE

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EVERY physician knows the resistance of patients to any modification of smoking habits. Yet often it is desirable to reduce the intake of nicotine, the substance conceded to be the chief physiologic component of cigarette smoke.

Here it is suggested that the physician advise Camel, the slower-burning cigarette. Medical—research authorities* find, and Camel's scientific tests** indicate, that a slower-burning cigarette produces less nicotine *in the smoke.*

Comparative tests demonstrate that the smoke of Camel cigarettes contains 28% less nicotine than the average of the 4 other of the largest-selling brands tested—less than in the smoke of any of them.

In adjustments of smoking hygiene, the cooperation of your patients is important. Camel's blend of costlier tobaccos is noted for its mildness, coolness, and better flavor. Besides, Camel cigarettes are popularly priced.

A RECENT ARTICLE by a well-known physician in a national medical journal** presents new and important information on the subject of smoking, together with other data on the significance of the burning rate of cigarettes. There is a comprehensive bibliography. Let us send you a reprint of this article for your own inspection. Write to Camel Cigarettes, Medical Relations Division, 1 Pershing Square, New York City.

** J.A.M.A., 93:1110, Oct. 12, 1929*
Bruckner, Die Biochemie des Tabaks, 1936
*** The Military Surgeon, Vol. 89, No. 1, p. 7, July, 1941*

CAMEL

THE CIGARETTE OF COSTLIER TOBACCOS

The different methods of surgical attack are well evaluated.

Angina pectoris, denoting as it does a disease condition which causes so much pain and so many deaths, deserves to be presented to medical men in a detailed and authoritative way with the very best that is known in diagnosis and management. The author has made just that kind of presentation, in discriminating, flawless English.

THE CONQUEST OF BACTERIA: From Salvarsan to Sulphapyridine, by F. Sherwood Taylor, with a foreword by Henry E. Sigerist. *Philosophical Library and Alliance Book Corporation,* 212 Fifth Ave., New York City. 1942 $2.00.

A historical background is given against which the phenomenal developments in chemotherapy are portrayed. The author finds no difficulty in conveying the magnitude of the achievement without recourse to the melodramatic vocabulary of so many of our own writers on medical subjects for lay readers. It is easy to agree with Professor Sigerist in the opinion that this is the best type of popular book on a scientific subject.

SURGERY OF THE AMBULATORY PATIENT, by L. Kraeer Ferguson, A.B., M.D., F.A.C.S., Lieut.-Comm., Medical Corps, U. S. Naval Reserve; Assistant Professor of Surgery, University of Pennsylvania, with a section on Fractures by Louis Kaplan, A.B., M.D., F.A.C.S., Associate in Surgery, University of Pennsylvania. 645 illustrations. *J. B. Lippincott Co.,* Philadelphia, London, Montreal. 1942. $10.00.

As the author says, this is a much-neglected branch of surgery. The book has three parts. First is given a discussion of typical lesions with description of ordinary course and the management required. In the second part regional surgery as applied to the ambulant patient is covered in a helpful, practical way. The concluding section deals with fractures and dislocations.

It is a pleasure and a relief to see, from a first-class surgeon with the best of hospital and medical-school connections, a book on surgery which condemns the habit of surgeons with large hospital practices putting patients in hospital "as a matter of convenience" (to the surgeon) who require only surgical treatment which may be given just as helpfully and much less expensively in office or home, in many cases allowing the patient to continue his usual work.

The author tells us that no extensive nor expensive equipment is necessary, and goes on to list what is needed of furniture and special supplies. A chapter is given to anesthesia, local and general, one each to preparation for and conduct of operations, postoperative care, treatment of inflammation due to infection, special lesions, open wounds, burns and frostbite, foreign bodies, cysts and tumors. Part Two details the various surgical procedures of the various regions, applicable to the going-about patient. Part Three covers adequately, without redundancy, the management of that great majority of cases of fracture and dislocation which should be taken care of in office or/and home. This part covers also the ambulatory after-treatment of fractures which have been treated in hospital.

THE 1941 YEAR BOOK OF DERMATOLOGY AND SYPHILOLOGY, Edited by Fred Wise, M.D., Clinical Professor of Dermatology and Syphilology, and Marion B. Sulzberger, M.D., Assistant Clinical Professor of Dermatology and Syphilology, New York Post-Graduate Medical School. *The Year Book Publishers, Inc.,* 304 S. Dearborn Street, Chicago. $3.00.

The war is credited with having stimulated productive work in regard to the action on the skin of heat and cold and chemical irritants; on scabies, its prevention and treatment; on cutaneous industrial hazards. The subject of dermatitis seborrheica is covered with the general practitioner specially in mind. The *number* of remedies recommended is discouragingly large. For some purposes allergy eczema and dermatitis are grouped together. Drug eruptions are given due consideration, as are the hematogenous dermatoses. Radium is given as the agent of choice for treating hemangiomas. The sul-

Lipolysin for OBESITY

Method Now Prescribed . .

stimulates oxidation processes that "burn up" fat

Dysfunctioning endocrine glands disturb the equilibrium of cell metabolism, often resulting in gross deposits of fatty tissue about the body.

Lipolysin introduces a regulative and corrective influence into this imbalance. It aids in stimulating internal processes to a normal level. Fat oxidation is speeded up with a resulting reduction of obesity.

NON-TOXIC

Lipolysin contains no dinitrophenol; is non-toxic.

This preparation provides the potentially active hormones of Thyroid, Pituitary (anterior lobe), Thymus, in addition to Ovary and Testicle in respective preparations.

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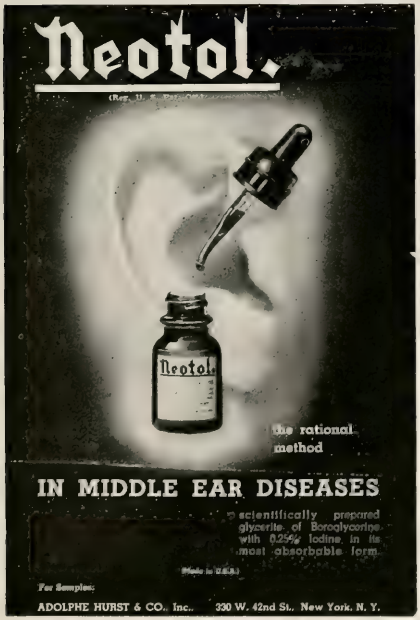
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fonamides are thought to have limited value in dermatology. An alkaline vanishing cream containing 10% sodium perborate has been found to prevent poison-ivy dermatitis.

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THE 1941 YEAR BOOK OF PEDIATRICS, Edited by Isaac A. Abt, D.Sc., M.D., Professor of Pediatrics, Northwestern University Medical School, with the collaboration of Arthur F. Abt, B.S., M.D., Assistant Professor of Pediatrics, Northwestern University Medical School. *The Year Book Publishers, Inc.*, 304 S. Dearborn Street, Chicago. $3.00.

Special attention is called to the articles dealing with resuscitation, the significance of gastric acidity, immunization against rheumatic fever, and the treatment of pyuria.

The collaboration of the elder and younger author gives to this selection from the publications of the past year an excellence of quality which could hardly have been obtained in any other way.

The editors' notes add much to the value of the articles they have chosen for abstraction.

BACTERIOLOGY LABORATORY METHODS, by E. S. King, M.D., Professor of Bacteriology in the Bowman Gray School of Medicine of Wake Forest College. Winston-Salem, N. C. *Charlotte Medical Press*, Charlotte, N. C. $2.50.

This book is offered as a guide to laboratory work in medical bacteriology. It presents all the essentials of the subject in such form as to be eminently suitable as a textbook for students of medicine, of dentistry and of nursing, and for the instruction of technicians in this field.

Dr. King has successfully resisted the temptation to reveal his encyclopedic knowledge of his subject, and has left out all that matter which, much as it might delight the scholar, is of no practical usefulness to the patient or to those ministering to him.

Gout.—A diet high in fats used as a therapeutic test in 10 cases of suspected gout brought forth a confirmatory exacerbation in nine.

Paroxysmal Tachycardia.—A case has been reported in a 3-weeks-old infant.



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Mon.	*Ped*: Introductory Discussion of Child Health Problems	*Ped*: Preliminary Rounds	*Ped*: Round Table Discussion of Appraisal of Infant: New-born, Resuscitation, Premature Care		Lunch	*Ob*: Round Table Discussion of Antenatal care: Purpose, Methods, Results	*Ob*: Infection: Cause, Prevention, Treatment	
Tues.	*Ob*: Preoperative Hospital Staff Conference	10:00 *Ob*: Toxemia: Cause, Prevention and Treatment			Lunch	*Ped*: Round Table: Immunization and contagious Disease	*Ped*: Teaching Rounds on Pneumonia	
Wed.	*Ped*: Therapeutics	*Ped*: Staff Rounds		*Ped*: Pediatric Procedures: Venipuncture, Transfusion, etc.	Lunch	*Ob*: Dystocia: Its Recognition and treatment	*Ob*: Hemorrhage: antenatal, intrapartum, postpartum; prevention and treatment	
Thurs.	*Ped*: Infant Feeding				Lunch	*Ob*: Conduct of Labor, normal and abnormal	*Ob*: Indications and contra-indications to interference; Routine operative obstetrics	*Ob*: Analgesia: Its use and misuse
Fri.	*Ob*: Technique of Contraception	*Ob*: Endocrines in Pregnancy	*Ob*: Venereal Disease		Lunch	*Ped*: Diarrhea and Enteritis		*Ped*: General Discussion

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JAMES M. NORTHINGTON, M. D., Editor

VOL. CIV CHARLOTTE, N. C., APRIL, 1942 No. 4

Burns—Emergency Care*

Edward A. Kitlowski, M. D., Baltimore

THE TREATMENT of burns is an extremely difficult problem under ordinary circumstances. It becomes a truly staggering task under conditions where large numbers of

What should a doctor do outside of the hospitals when he must care for a large number of cases?

The difficulty in the treatment of burns arises from two factors—shock and infection. Shock arises from a number of factors. Chief among these are the pain of the burn and the upset in the permeability of the blood vessels which gradually produce shock that increases until the factors are controlled by the patient with or without the aid of the physician. The problem, then, is to select the cases, if possible, which can safely be cared for outside of the hospital. There are no means, as far as I know, that can be used to determine this absolutely. The site of the area burned is important. A burn on the face or neck is more dangerous than one of the same size on the back or the thighs. An area three inches in diameter on the cheek can produce fatal shock. A burn which blisters badly or involves a portion of the true skin beneath is more likely to produce shock immediately than is one of the same area which has been charred. This is probably due to the complete destruction of the nerve ends preventing the arising of pain impulses. The charred patient will surely develop shock later and should be sent to the hospital immediately. The size of the area is also important, irrespective of the degree. A burn which involves more than a fifth of the body will invariably require treatment for shock.

One can readily see that shock is a real problem which must be watched for and anticipated if possible.

The other factor is infection. Every case of burn in which there is an elevation in temperature, often in the first 48 hours, can be considered infected. As soon as the infection is controlled, the temperature elevations will be slight. The infection is due to the organisms which have survived the burn and begin to show their presence in 2 or 3 days. There is also the possibility of a tetanus or gas-bacillus infection in addition, because of the dead tissue present.

The two factors must be treated together since the patient must be cared for as an individual. General systemic treatment is the first consideration irrespective of the size of the burn.

The patient should be given generous doses of opiates to alleviate the pain, and be placed in a warm room. Too much heat is as bad as cold. The temperature should be as near to body temperature as possible. Clothing should be removed and the patient placed on a surgically clean sheet. If the area is extensive the patient should be moved to a hospital. An extensively burned patient will rarely survive without intravenous treatment for the shock. A delay of 4 to 6 hours may be fatal from

*Presented before the Medical and Chirurgical Faculty, Baltimore, Maryland, February 20th, 1942.

shock progressing beyond any possibility of recovery. No treatment should be applied to the burned area if the patient is to be sent to the hospital. The area must be carefully cleaned before the application of any type of treatment, otherwise the subsequent infection will be difficult to control. Do not apply large quantities of the sulfa drugs as absorption may cause death. If they are used the dosages must be small and one should be in a position to get tests on their concentration in the blood. When the patient arrives at the hospital, he should be cared for immediately. A specimen of blood should be obtained to determine the hematocrit and the protein content. Under anesthesia the area should be carefully cleaned with hydrogen peroxide, and all loose skin removed. An intravenous injection of blood plasma should be started. The area can now be sprayed with tannic acid, triple dye or a preparation containing one of the sulfa drugs. The literature is full of satisfactory results with various types of local treatment so that one cannot blandly ignore them by insisting on one type. The main factor to bear in mind is that the burned area should be cleaned carefully without increasing the shock, and then kept scrupulously protected against further infection. Determination of the blood concentration should be made every 4 to 6 hours and the intravenous treatment adjusted to the findings. Do not use subcutaneous injections of fluids. They absorb very little, if at all, and tend to increase the discomfort of the patient. Give fluids as much as possible but avoid forcing to the point of vomiting.

The patient with a lesser burn can be safely cared for at home. The burned patient, especially if it be a young child, should always be considered in danger for the first 48 hours. Small burns can be covered with such an ointment as unguentine or butesin picrate. the patient given a sedative and kept in bed. A hemoglobin determination should be made, and repeated in 12 hours—sooner if the patient manifests more drowsiness than the sedative would produce. An increase in the hemoglobin determination will indicate shock and measures should be taken to combat it. An intravenous injection of 5- or 10-per cent glucose or normal saline can be given if plasma is not available. A child under 5 years of age can easily take 300 c.c. of glucose or normal saline, especially if shock is beginning to appear. It is important to make a hemoglobin determination early to be able to follow any changes in blood concentrations. One must remember that there are many persons with various degrees of secondary anemia, so a basic individual reading is important. A child with a 65-per cent hemoglobin may have an 85-per cent hemoglobin in 6 hours. This would mean nothing unless one were aware of the original condition. Another patient may have a normal hemoglobin of 85 per cent and in 6 hours it might rise to 105. This change would attract attention and yet it would not indicate more than the change in the first case.

The larger burns can be washed with hydrogen peroxide and sterile water and sprayed with tannic acid solution or triple dye. The patient should be kept in bed with the area exposed to an electric light under a tent made with sheets. The tannic acid or triple dye can be sprayed on by the family at intervals. A 10-per cent tannic solution with silver nitrate is probably best since it will form an eschar quickly.

The dry eschar is least prone to infection, hence its desirability even though subsequent treatment is more difficult.

One must consider the various home remedies which have been used to treat burns such as baking soda, flour or sliced raw potatoes. All of these help to ease the patient by covering the denuded surface but all mean infection. One can make tannic acid by seeping tea leaves until a very dark liquor results. The family or other persons can be enlisted to spray or mop the burned areas with this solution after some silver nitrate solution has been added.

The hands should never be covered with an eschar. This acts like a cast which hinders the unavoidable edema and may cause irreparable damage to the fingers. The hands should be covered with an ointment, cod liver oil, or picric acid solution. After the first two days the dressings should be changed to compresses or a sulfathiazole ointment. Subsequent treatment will depend on the depth of the burns. This gradually reveals itself and the proper treatment can be instituted. If the skin has been destroyed, grafting must be done.

Conclusion

Didactic information concerning the treatment of burns cannot be given entirely satisfactorily.

The doctor should consider every burn beyond the small blistering type as a potentially serious case.

The patient should be given relief from pain with opiates hypodermically.

At least a hemoglobin determination should be made as soon as possible to give a basic index for the treatment of shock.

The burned area should be carefully cleaned and covered with an eschar to prevent fluid loss and give comfort, with the exception of the hands which should never be covered with an eschar.

The patient should then be watched for shock, using the hemoglobin readings as the easiest method available.

If there is any indication of beginning shock, intravenous fluids should be given. In the more severe cases the patient should be made comfortable with opiates and sent to the hospital.

Vitamin C in Normal Nutrition

Effect of Low-Cost Diet on Plasma Levels Over a Six-Weeks Period

D. F. Milam, M.D., Chapel Hill
North Carolina coöperative Nutrition Study

Walter Wilkins, M.D., Raleigh
State Board of Health

IN THIS DAY of vitamin tablets it is well occasionally to call attention to the fact that the normal source of vitamins is our food and not drug store preparations. The relative abundance of the several vitamins in our food varies greatly. A little thoughtful attention to the matter will greatly improve the diets of most of us. For normal individuals, that is those not having deficiency disease and not too far down the scale of partial deficiency, the daily food intake should furnish all the needed vitamins in adequate quantities. Infants, of course, need an additional source of vitamin D.

Surveys made in North Carolina [1,2] have very clearly shown that partial deficiency in vitamin C is very common in the areas studied. Apparently a very considerable degree of deficiency can exist without the appearance of any of the commonly accepted objective signs. That is to say, scurvy is relatively rare though vitamin-C subnutrition of marked degree is quite common. This has been strikingly illustrated in one instance[3] of experimental human scurvy where a normal man on a vitamin C free diet did not show any external objective signs of deficiency disease until the sixth month of privation, and then petechiae on the legs rather than the more common sign of scurvy, spongy bleeding gums.

It is difficult to evaluate the effect of vitamin C subnutrition on the individual when it is not severe enough to produce objective signs. It is commonly possible to elicit stories of great improvement in energy and feeling of well being when an adequate diet is reestablished. That adequate vitamin C intake can be established and maintained on low-cost diets and within very short periods is a fact of considerable interest and importance.

The accompanying table shows the records of 15 children who from July 21st to August 26th, 1941, were given the benefit of a six-weeks day camp, where three well-balanced, low-cost meals were furnished each day. The children were chosen for the group as examples of average school children in certain areas near Chapel Hill, North Carolina. Each was given a thorough examination on entrance, and during the six weeks had special attention focused on their nutrition, rest period and recreation. Samples of blood of these 15 children were examined in the laboratory at two-weeks intervals. The vitamin-C determinations were made on the Evelyn photoelectric colorimeter by the usual method with Tillman's dye. The blood samples were examined within two hours after they were drawn. All were fasting samples taken before breakfast.

Plasma Vitamin C Levels at Biweekly Intervals in 15 Children on a Low-Cost Adequate Diet, Chapel Hill, Summer 1941

	Color		Milligrams per 100 c.c. Plasma			
Number	Sex	Age	At Start	After 2 Weeks	After 4 Weeks	After 6 Weeks
1	WM	14	1.1	1.4	1.4	1.2
2	WM	13	0.3	0.4	1.4	1.4
3	WM	6	0.9	0.9	1.3	1.0
4	WF	11	0.7	1.4	1.3	....
5	WM	9	0.5	1.4	1.2	1.3
6	WM	9	0.4	0.9	1.3	1.6
7	WF	11	0.4	1.0	1.9	0.5
8	WM	9	0.3	1.1	1.5	1.2
9	WF	11	0.7	1.0	1.5	1.1
10	WF	6	0.3	0.7	1.2	1.2
11	WM	8	0.6	0.8	1.2	1.4
12	WF	6	1.0	0.9	0.9	....
13	WM	12	0.2	0.8	1.3	1.6
14	WM	7	0.2	0.5	1.3	1.3
15	WF	6	0.2	1.2	1.4	1.2
Mean			0.52	0.96	1.34	1.23

From the table it is evident that the greatest improvement occurred in those with lowest levels. But also most of those with fairly high normal levels at the start showed improvement. Child No. 7 developed otitis media subsequent to the fourth week and as a consequence had lost most of her gain at the time the sixth week test was made. From a previous study[1] it was judged that a plasma level under 0.6 mg. vitamin C per 100 c.c. plasma represents subnutrition in this vitamin. The present results would indicate that the normal child on a good diet tends to maintain a plasma concentration far beyond that, in fact above the 1.0 mg. level. On an adequate diet a satisfactory level is reëstablished within two weeks or less.

It should be mentioned that the plasma vitamin-C levels found in this group at the start, 0.5 mg. average, are considerably above the levels usually found in community surveys, especially in spring surveys. In one area[2] 27 per cent of the people had a vitamin-C plasma level of zero, and 86 per cent were under the 0.6 mg. level. Such evidence is leading to the conclusion that subnutrition in this vitamin is very common and widespread in North Carolina.

The vitamin-C-rich foods are abundant in this state. The native tomato (raw or canned by pres-

(To Page 195)

The Prevention of Diphtheria and Scarlet Fever in Contacts*

Irving S. Barksdale, M. D., F. A. P. H. A.
Gladys K. Mullenix, R. N.
Loee Bates Fuster, R. N.
Greenville, South Carolina
Greenville City Department of Health

WHICH ONE of us has not been asked in our experience as practicing physicians and health officers how we could prevent a child who had been exposed to diphtheria and scarlet fever from contracting these diseases? Commonly the question comes from some almost frantic mother who has neglected the diphtheria inoculation and now runs to us wanting "a shot" of something to keep the child from taking the disease. Until recently our realization of helplessness in the face of exposure during a patient's incubatiton period and after clinical symptoms have become manifest was quite as keen as that of the mother, since about all we have hitherto been able to do has been to advise her to be on the lookout for sore throat and to call us at the first appearance of this symptom of either diphtheria or scarlet fever.

With such a problem confronting us, the question arises in our minds as to who are contacts of these diseases and who are not. A person, especially a child, exposed to another at the outbreak of symptoms, or one coming in contact with a patient during his incubation period, can be considered as a contact an dshould be so cultured and studied bacteriologically as to whether or not he or she is a well carrier or in the incubation period of the disease. If it is impracticable or impossible to culture such individuals, they should be treated as potential carriers and nothing taken for granted. All contacts, as such, should be given the preventive treatment as will be outlined later in this article.

Many times we have gone to quarantine a home for diphtheria or scarlet fever and found that all of the children of school age had been spirited away to live with a grandmother or aunt, at the suggestion of the mother and with the consent of the attending physician, to escape quarantine and continue in school with the hope of no interference on behalf of the health officer. Such children having been in contact with the patient at the onset of symptoms as well as during the incubation period are most certainly contacts and should be so handled, just as if they were still in their own home.

During the past seven years we have observed the following rules in preventing the spread of diphtheria or scarlet fever from a given case which can be considered as an epidemiological focus.

1. Hospitalization and treatment on the isolation ward is the disposition of choice. This has always altered our method of dealing with all contacts as it suddenly removes a dangerous epidemiological focus from the family and the community and enables the contacts to return to school or to work sooner, provided cultures prove negative and preventive local treatment is kept up in the throat and nose for several days.

2. Immediately upon the proper hospitalization or the death of the patient, all contacts, adults as well as children, should receive the routine local treatment in the cavity of the nose and throat, as hereinafter described, twice daily for four or five days.

3. At least two cultures of the nose and throat should be made on Löffler's coagulated beef-blood serum prior to release from isolation or quarantine. If the organisms of diphtheria and scarlet fever (*Strep. haemolyticus* or *Strep. scarlatinae*) are found on routine bacteriological examination, the throat should be continuously treated until the organisms disappear; also the nasal cavity if the diphtheria bacillus is found in the nasal culture. We have never found it necessary to irrigate the nasal cavity to kill scarlet fever organisms as we have never been able to find these in nasal cultures.

4. Before the patient; *i.e.*, the epidemiological focus, is returned to his family he should be subjected to the routine local treatment as are the contacts, also before his release from quarantine, which should be terminated only by the finding of two successive negative cultures—two negative *nose and throat* cultures in cases of diphtheria, and two successive negative *throat* cultures in cases of scarlet fever. Always it is well to rid convalescents of their organisms before their return to their families and to the community.

*Presented to the 44th Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greenville, S. C., February 23rd-24th.

5. Along with the physician's routine treatment of the diseases, conscientious local treatment of the nose and throat in diphtheria and of the throat in scarlet fever should be carried out twice daily to prevent reversion to the carrier state, and further reëxposure to contacts.

6. Early removal of all diseased tonsils and adenoids should be insisted upon by the physician, as organisms might be still lurking in the crypts in spite of the local treatment, to prove virulent for other future contacts, both children and, less frequently, adults. Only occasionally have we had a case of scarlet fever develop in a contact. Three cases of scarlet fever and no case of diphtheria have resulted during the past seven years in some 800 contacts who have received the preventive local treatment in our series. All these three cross-infections were in brothers and sisters of convalescent patients who received no topical treatment. All of these children had ragged cryptic tonsils which effectively shielded the organisms of scarlet fever from the antibacterial agent. Had these patients received the local treatment daily during their illness and convalescence, very likely these cross-infections would have been prevented.

7. Failure or inability to hospitalize the patient prolongs the quarantine period of contacts as the epidemiological focus is ever-present, to expose and reëxpose other members of the family, as it is impossible to isolate a patient in his home from a bacteriological and public-health standpoint. The presence of the focus in the home not only keeps the school-child contacts out of school but should keep the parents in isolation, especially if they are engaged in handling food or if their work brings them in contact with children or many people.

It has always been our practice to have the bread-winner of the family take up his abode somewhere else during the quarantine. After getting two successive negative cultures on this individual he is allowed to return to his new place of residence and from thence to his work. Moreover, it has been our practice always, with the family physician's consent, to institute local treatment aimed at the destruction of the causative organisms in this individual twice daily for four days, whether these organisms are found or not. The local treatment should be given even though the organisms are not found, as there is always the likelihood that they might have been missed, always the likelihood that the head of the family might have come in contact with the patient or an immediate organism-carrying contact of the patient. It should be remembered also that the patient and all contacts, including the bread-winner, should continue to receive the routine treatment for at least two or three days immediately after the release from quarantine to get rid of any remaining diphtheria bacilli or scarlet fever streptococci.

One other remaining difficulty incurred by attempting to treat a case of either of these diseases at home is the twice daily necessity of nasal instillation in event of diphtheria, and swabbing the throats of all contacts in the event of either disease by some member of the household for the duration of the quarantine and for two or three days after release of patient and contacts from quarantine. Four days of such treatment of the contacts is usually sufficient if the patient is hospitalized.

In corroboration of our work,[4] Costen of St. Louis makes the following statement in the summary of an article on *Nasal Diphtheria,* treatment of carriers, etc.:

"Attention is called to the importance of removal of adenoids and tonsils in the treatment of carriers and to the efficiency of 'Bismuth Violet.'"

Material Used and Method Employed

For the past ten years two preparations of bismuth violet—the 0.5% aqueous solution with 10% glycerin; and the tincture, also 0.5%, in ethyl alcohol 50%—have been used in freeing convalescents and contact-carriers of the organisms of diphtheria and scarlet fever. This dye was selected for this work because of its destructive action on so many different kinds of pathogenic organisms at the same time being non-toxic to the host. Many of the most dangerous organisms are killed in a very few seconds by rather weak dilutions of the dye. *Bacillus diphtheriae* is killed by a 1:10,000 dilution in ten seconds. It was our practice to use the aqueous-glycerine solution in throats devoid of ragged cryptic, hypertrophied or otherwise diseased tonsils; and the more potent organism-killing tincture of bismuth violet in all those having questionable and irregular tonsils. This was the solution of the dye of choice due to the diminution of surface tension and to the tendency of the tincture to soak into the crypts and holes of the tonsil to reach any organisms that might be lurking in these otherwise inaccessible places. Moreover, the bacteristatic and the bactericidal properties of the tincture are much greater than of the solution. For this reason we have supplanted the aqueous solution of the metal-dye combination with the more efficacious tincture which is non-irritating even though used twice daily for a number of days.

The method of application of the dye is quite simple. A loosely-wrapped, cotton-tipped applicator is saturated with the solution of the dye and applied, with the aid of a tongue depressor, to as much of the area of the throat as is possible. After the application of the dye to the mucous membrane, the subject is instructed to keep the head in

extension for a few seconds and to refrain from spitting for the short time of a minute or two. No fear need be entertained as bismuth violet is non-toxic even if swallowed and cannot damage the mucosa of the throat after prolonged contact. For proper results the throat should be swabbed twice daily before meals, or after the stomach has emptied, to avoid vomiting and losing food unnecessarily, as vomiting may occur at times in high-strung individuals with a pronounced gag-reflex. Such swabbings of the throat aimed at the destruction of the pathogenic organisms are usually done by some intelligent member of the family or school group (preferably the school nurse), following instruction or demonstration by the attending physician or public-health nurse. These local treatments are usually kept up for four days or until negative cultures are obtained. Our experience of 800 cases of patients and contacts of these diseases over the past seven years, two or three treatments a day for from four to seven days usually suffice to produce the desired negativte diphtheria or scarlet fever streptococcus cultures.

This method of ridding carriers of their organisms and of preventing additional cases of diphtheria and scarlet fever has been of great practical value in families, in playmates, in whole classrooms or groups at school, in a local over-crowded orphanage, and elsewhere.

The occasional nasal carrier encountered following nasal diphtheria and in casual contacts of diphtheria has been promptly and successfully dealt with by the regular periodic instillation of a weak bismuth violet solution in saline (1 c.c. of the stock solution to 30 c.c. saline) one-half of an ordinary medicine-dropperful into each nostril b.i.d., care being taken to cover with this non-irritating solution all parts of the mucous membrane of the nasal cavity. This is accomplished by having the subject place the head over the edge of a bed or in hyper-extension so that the fluid may be favorably affected by gravity throughout the nasal cavity. Moving the head from side to side during the process of instillation greatly facilitates the diffusion of the drug throughout the nasal cavity and the nasopharynx.

Summary and Discussion

1. The problem of prevention of diphtheria and scarlet fever and the physician's inability to institute any preventive means have been put forth.

2. The confusing question as to who are contacts of these diseases has been outlined and an attempt to answer this question has been made.

3. Seven workable rules of handling the contacts of diphtheria and scarlet fever patients in relation to the hospitalization or non-hospitaliation of the epidemiological focus (*i.e.*, the patient) have been mentioned briefly.

4. Advantages of proper hospitalization have been discussed.

5. Difficulties encountered following non-hospitalization of the epidemiological focus have also been discussed in detail.

6. The corroborative work of Costen of St. Louis has been mentioned.

7. The material and method used in topical application to the mucous membranes of the nose and throat have been described in detail. The efficacy of the metal-dye combination in the preventiton of these two dreaded diseases in contacts and the absence of toxicity to the patient have also been discussed.

The great amount of work done in such a large number of cases over so long a period of time represents our effort to solve the physicians' and health officials' great problem of preventing these two diseases in contacts, as there were no other known preventive methods which would meet our immediate needs. Our duty was to care for those already exposed to diphtheria and scarlet fever. It is true that diphtheria toxoid will prevent this disease; but it must be administered aforetime—not less than six weeks before the first exposure. Moreover, in spite of all the work that has been done in the perfection of diphtheria immunization, still vast proportions of our supposedly enlightened population have never been protected and many of our people are no better off than were our ancestors fifty years ago.

As for the administration of scarlet fever toxin or toxoid none of this is done, this because of the toxicity of the material and the questionable results obtained. In other words, immunization against scarlet fever has never become a safe practical and general procedure. In spite of all that has been done, the *immediate concern* of mother, physician and health officer is *immediate protection* of all those exposed. Hence our labors to develop this comparatively new method.

Conclusion

In view of this experience and the repeated success encountered in the prevention of diphtheria and scarlet fever in large groups of children at school and in the local orphanage (the Bruner Home of the Salvation Army) as well as in family and playmate contacts, this simple, rational and practical method should prove of great value in preventing these diseases among contacts in our present and future armed forces. Much time and man-power could be saved our Nation by making unnecessary the widespread quarantine of such contacts as was the case in the last war.

ACKNOWLEDGEMENTS

We feel very grateful to many of our local physicians for their valuable advice and assistance, to Mrs. Herbert Lindsey, R.N., for her much appreciated technical assistance in the schools, to Laurette M. Barksdale and Elizabeth Seaborn for their assistance in the preparation of this manuscript, and most of all to The Great Physician for His kind and patient leadership and direction of this phase of His work.

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Discussion

DR. RUSSELL L. CECIL, New York City:

This is a subject in which I happen to much interested, so I can't resist the temptation to discuss Dr. Barksdale's paper. His results seem to be highly gratifying and I just want to ask, in passing, if that dye stains the buccal cavity?

DR. BARKSDALE:

It only stains, Dr. Cecil, the diseased tissue and organisms. It stains to a slight extent, but not annoyingly so.

DR. CECIL:

A number of dyes we know of course can be used to sterilize the buccal cavities very successfully. In many cases the germs disappear completely, you can take a swab from the throat and get a sterile culture; but in an hour or two the bacteria return in large numbers and you are disappointed to find that the germ you thought you had destroyed shows up again. Dr. Barksdale, in your culture work, do you find that they disappear completely with the use of this dye?

DR. BARKSDALE:

If I may be allowed to answer the questions as they come, I have thought that all through the years myself, Sir, and the only way I can account for that is that they are such highly specialized organisms and so very delicate that they cannot resist the chemical when repeatedly applied. We have conscientiously cultured for the bacteria of both diseases. I have to answer, yes, they do disappear.

DR. CECIL:

Does this dye kill all the bacteria in the mouth?

DR. BARKSDALE:

No, Sir.

DR. CECIL:

We always figured in our work with such dyes as dichloramine and mouth disinfectants that bacteria got so deep in the mucous crypts that they couldn't be got at, and that the germicide was diluted in saliva and allowed to grow as usual. However, that is not what I wanted to talk about. Hemolytic streptococcus does more damage than scarlet fever around New York. It is our most serious winter problem and some method of getting rid of it would be highly desirable. When we take throat cultures of children and grown people in early September, we have very few pathogens. We find comparatively low incidence of streptococcus in the summer and early fall. We have two peaks of respiratory infections—one in the fall, comparatively mild with few complications; another peak in January and February, a more sustained peak of respiratory infections, with colds, influenzas and pneumonias. During the peak in mid-winter we get a high percentage of complications due to the fact that the secondary invaders become common in the mucous membranes of healthy people—in other words, carriers are more prevalent than in summer and fall.

I have always opposed the use of sulfonamides in common respiratory infections like colds and influenza, when they were so dangerous and caused so much sickness; but we now have sulfadiazine which has no toxicity and we are wondering if this agent might prevent infection with streptococcus hemolyticus and pneumococcus. The complications that we get in children and adults are in sinuses, ears and bronchi and in the lungs. Because I got interested in the subject, I felt that we had not exhausted it. I feel strongly now that the sulfonamides are curative agents and that a comparatively harmless one is sulfadiazine, if given by mouth in doses of three grams a day, a gram every eight hours. If you give sulfadiazine tablets every eight hours, you will get no symptoms from it and you get a very good blood level—56 or 57 milligrams per cent. Now if you have a cold that starts off with a sore throat and take the tablets, you don't have complications and that is all there is to it.. Last fall we started in the cold clinic in connection with medical work and we have given the tablets to 50 or 60 on the staff of the New York Hospital and find that it reduces colds to simple things. A cold is uncomfortable and you may get hoarse, but you don't get complications with sulfadiazine tablets. The ordinary cold runs from three to five days. The same with influenza. They shouldn't go longer than that unless you have complications. I believe by using sulfadiazine we can sterilize the mouth, remove the pathogens or keep them under control and that complications which really present the problems in respiratory conditions can be reduced to a minimum.

VITAMIN C—From P. 191

sure cooker or the coldpack method) is an excellent source. Most fresh fruits and vegetables eaten raw furnish very appreciable quantities. The habit of excluding raw foods from the diet is not an uncommon practice here. A great advance will be made when all of us consider a meal incomplete if it does not contain some raw food.

In the dietary of the children here discussed only low-cost foods were used. Calculated at regular retail prices charged by local grocery stores this diet could have been duplicated in the home at a raw food cost of 21.6 cents per child per day.

The diets for this group of children were planned and the feeding supervised by Miss French Boyd of the School Health Coördinating Service.

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DESPITE all efforts at reducing the incidence and mortality from cancer, it seems that doctors are especially prone to die of it.

Gastric Secretion *

C. M. Caravati, M.D., Richmond

ENZYMES and pepsin are secreted by the activity of the gastric glands in the cardiac end of the stomach. It has never definitely been established in what structures of the cardia hydrochloric acid is formed. It is not in the cells or lumen of the gastric glands. Brunschig and Schmitz[1] have demonstrated activated chlorine leaving the blood plasma and entering gastric mucosa, and chlorine is known to be more abundant in the fundus of the stomach than in any other tissue. It is probable, then, that the chemical compound HCl is formed in this region of the stomach.

Pepsin exists in the gastric glands as zymogen granules before its secretion. It is activated by the HCl which is necessary for pepsin digestion. The products derived from peptic digestion are albumin, primary proteoses, secondary proteoses and peptones and it breaks down a small amount of protein to amino acids; most of the pepsin is destroyed when it enters the intestines. It is currently believed that rennet is an integral part of the pepsin radical.

Hydrochloric acid assists in chemical digestion by activating pepsinogen and by inverting disaccharides. It aids in the regulation of gastric peristalsis and in pyloric sphincter control. It acidifies secretin, an enzyme found in the intestinal juices, which stimulates the flow of pancreatic secretions and also encourages the flow of bile. It renders the stomach sterile, due to its antiseptic action.

To study the secretory function of the stomach, give the stomach a standardized duty to perform and then measure its activity. That is, give some standard stimulus—a test meal, or histamine—and then aspirate the gastric contents and quantitatively determine the amount of juice and the quantity of hydrochloric acid in a given time.

The chemical analyses for other substances in the gastric juices are of no particular significance. Peptic activity can be determined but no practical deductions can be had from it. Neither the quantity of mucus, of combined acid, of lactic acid, nor the cytodiagnosis of aspirated material as advocated by Kapp, Stamberger and Basel,[2] will add much to the proper evaluation of gastric function. These examinations are, therefore, not essential, and the chief value in this time-honored and popular laboratory precedure, gastric analysis, is the determination of the presence or absence of free hydrochloric acid.

Wilkins and later Bloomfield, Chen and Lindol[3] have studied basal gastric secretions, that is, they measured the amount of basal free HCl present without any stimulant to its production having been administered; and in a series of 52 patients with proven duodenal ulcer they found a basal acidity of over 100 to be almost positive evidence of duodenal ulcer. After stimulation with a standard test meal or histamine the height of the basal acidity varied even in *normals* and is, therefore, of no particular value.

A very practical, dependable, simple and non-irritating procedure for the study of gastric secretiton is to give 50 c.c. of a 7-per cent alcohol solution on a fasting stomach, insert a small Levin nasal tube and in about thirty minutes aspirate several c.c. of gastric contents. Add a few drops of Topfer's reagent and, if free acid is present a convincing pink color will immediately appear. If, instead a yellow color is produced, this indicates anacidity, and then histamine hydrochloride, 0.1 c.c. per 10 kilo body weight should be given parenterally, and other aspirations performed in fifteen and thirty minutes. If no free acid can then be demonstrated we may conclude the patient has achylia. Any of the other standard test meals, such as the Ewald or oatmeal, may be used if desired instead of alcohol.

It has been a tradition to perform fractional gastric analyses, but after a careful scrutiny of numerous acid curves over an extended period of time and the compilation of data obtained, we have been forced to conclude that fractional studies are probably unnecessary and uninformative. One aspiration usually suffices. Further, the amount of free acid is of little significance. The question is: Is the patient able to secrete acid?

Hyperacidity of over 75° is often found in normal individuals, and is always present in cases of duodenal ulcer, according to Sara Jordan and other investigators, particularly those of the New England States. Farther South, in our experience *not all* patients with peptic ulcer have hyperacidity.

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Hyperacidity may be of little importance, because there is much variation in the amount of acid secreted by the same individual at different sittings.

In swine, for instance the amount of acid varies from hour to hour during any given day. Advancing age causes a decline in basal gastric secretion in a large number of individuals, and 10 to 15 per cent of patients over 45 have no acid in the gastric juice. Anacidity, however, should always be investigated.

Faber,[4] in 1926, concluded that chronic achylia is exogenous and is produced by external factors acting on the stomach, but in 1935,[5] mainly from post-mortem studies, he concluded that anacidity is the result of some disease of the mucous membrane of the stomach, particularly gastritis. Careful gastroscopic studies in a series of 233 cases of achlorydria by Carey, Wetherby and Ylvisaker[6] found that 26 per cent of the individuals in this group had an apparently normal gastric mucosa; and it was concluded that if the patient does not have carcinoma, pernicious anemia, gallbladder disease or peptic ulcer, the most frequent causes of achlorydria are atrophy of the mucous membrane or atrophy with superficial gastritis, or superficial gastritis alone.

Schindler[7] and his coworkers made gastroscopic examinations on 101 cases with histamine-proven anacidity and found gross anatomic lesions in all except five cases. The lesions ranged from a superficial gastritis to hypertrophic changes in the membrane and a third of the cases showed atrophic gastritis. Changes were found mostly in the body of the stomach and the anacidity was ascribed to inflammatory processes.

Patients with *chronic peptic ulcer,* either gastric or duodenal, *never* have anacidity. Palmer and Nutter[8] have reported several cases of very *small, acute* and *subacute gastric ulcers* with achlorhydria. If there is an ulcerated lesion of the stomach of moderate size, and no acid is present, carcinoma is likely. However, in only 30 to 40 per cent of cases of carcinoma of the stomach is there a state of anacidity. If acid is present the gastric ulcer may be benign or malignant. Benign ulcers never occur on the greater curvature of the stomach. Ulcers on the lesser curvature between the antrum and cardia are usually benign.

Pernicious anemia patients all have achylia. Only six cases have been reported in which proven instances of Addisonian anemia have shown any free gastric acid. The cause of the acid lack is thought to be an atrophy of the gastric mucosa and gastritis, as proven gastroscopically[9] by Schindler[10] and by Chester Jones and Benedict, who state: "It appears that chronic gastritis may condition the patient for either cancer or pernicious anemia."

The evidence now available is non-convincing as to the precise etiology of achlorhydria.

Idiopathic hypochromic anemia (Plummer-Vinson syndrome) is found mostly in women, and there is commonly associated a gastric *anacidity.* Hypochromic and microcytic anemia, atrophic glossitis and enlarged spleen are some of the significant findings. It is thought by some to be due to chronic blood loss and it usually responds to adequate diet and *iron* therapy.

Non-tropical sprue is also characterized usually by total absence of free acid, even after histamine stimulation. This achylia, skin changes, persistent foamy diarrhea, with evidences of avitaminosis and a definite anemia, together with a low serum calcium and phosphorus level and a *flat* glucose tolerance curve, are convincing findings.

Absence of free HCl is a common finding in many cases of pellagra.

Much has been written about the possible effect of vitamin-B deficiency on gastric function. Barsook, Dougherty, Gould and Kremers,[12] and Babkin,[13], have noted disturbances of gastric secretion in vitamin-B deficiency both in animals and men. Alvarez *et al*[14] have observed no effect on HCl concentration and pepsin in the gastric juices of persons who were maintained for several weeks on a carefully controlled diet very deficient in vitamin B_1. It is quite universally accepted that the chief beneficial effect on gastrointestinal function of adequate thiamin therapy is stimulation of the appetite. This effect is, however, temporary and after 2 to 3 weeks, the benefit from its continued administration becomes less and less.

Do Pronounced Changes in Gastric Secretion Demand Treatment?

The presence of hyperacidity does not routinely require treatment, but if pain is present, as in peptic ulcer, it is demanded. It is known that it is *not* the level of the acid alone which accounts for the pain, for when the acid concentration is low, the pain may be worse. Why, then, will alkalis relieve the discomfort? It is probable that the pain is due to smooth-muscle spasm and alkalis give relief because of their effect on gastric motility. Sodium bicarbonate in hypertonic solution delays gastric emptying. Alkali powders will relieve the pain at times even[16] when anacidity is present. Brenhaus and Yerly have recently shown that milk is the most satisfactory neutralizing agent known, and when given frequently is more effective than antacid chemicals. The most ideal drug for acid neutralization is aluminum hydroxide. Its chief shortcoming is its tendency to produce mild constipation and it may interfere with absorption of phosphorus

in man and dog,[28] but if a patient is on an adequate diet, particularly on an ulcer regimen, with optimal quantity of dairy products, this is of no practical importance. It can be administered indefinitely without fear of alkalosis, while the absorbable alkalis, when taken over a prolonged period, may produce renal damage and true alkalosis.

Bloomfield and Pollard believe that lack of gastric acid is usually involutional and is, therefore, of no especial clinical significance and requires no treatment. Other authors as Dobson,[14] Shay *et al.*[7] from study of literature and independent experiments believe that gastric anacidity is capable of far-reaching effects, hence adequate replacement therapy should be carried out. It is true, as employed by C. S. Keefer,[15] that you can not administer to a patient sufficient quantity of HCl to compensate for the deficit in the stomach and that no amount of acid by mouth will restore the pH of the gastric contents; he therefore concludes that HCl by mouth is of no value.

It is a common clinical experience in the so-called gastrogenous diarrheas, in which the only abnormal finding is achylia, that the administration of HCl in doses of moderate size will promptly restore normal bowel habits.

The same is true in pernicious anemia, and as a result most hematologists agree that HCl is indicated in a certain case of pernicious anemia only if there is an associated diarrhea. This would seem to indicate that HCl produces some change in gastric function, even though when tested it shows little effect in acidifying gastric contents.

Clinical experience seems to warrant the close observation of patients with histamine-refractory achlohydria and the urging of treatment for them if symptoms arise. A rational program to advise is:

1. All condiments and roughage limited in the diet and smoking prohibited.
2. HCl drams 1 to drams 2 in a tumbler of water, buttermilk or fruit juices with meals through a tube..
3. If HCl is not well tolerated, give glutamic acid hydrochloride, for in solution this compound liberates free HCl. It is available in capsules which liberate the equivalent of 10 minims of HCl; one capsule should be given a.c. and one p.c.
4. Check patient at regular intervals, particularly in reference to the occurrence of hematological or gastric developments.

Summary

1. Gastric secretory physiology is briefly reviewed.
2. A simple but adequate method for determination of gastric secretion is presented.
3. Consideration of the significance of hyperacidity and achlohydria, and the necessity for therapy is discussed.
4. A practical regimen for the patient with achylia is suggested.

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Discussion

Dr. F. Eugene Zemp, Columbia:

Dr. Caravati presents the subject of gastric secretion in a very interesting manner, and his practical consideration of the subject should be of help. A renewed interest has developed in this subject, indicating that our knowledge of it is far from complete. For years I have done fractional gastric analyses which I consider has found value and injected histamine when achlorhydria was found. I have been surprised at the number of

patients who have no free hydrochloric acid, yet digestive symptoms and several years of observation failed to disclose any serious disease. However, a considerable number of those with achlorhydria and various symptoms of the gastrointestinal tract obtained complete relief from large doses of HCl. For a few years, I made it a rule to put all patients with achlorhydria on large doses of HCl and those with hyperchlorhydria on belladonna and alkalis. A majority were relieved of their symptoms, but many were not. The ulcer cases were dramatic but those with gallbladder disease, chronic appendicitis, colon disturbance, etc. required additional measures. A small group, usually past 45 years and with a visceroptosis, had a normal free HCl but a high total acidity. This was attributed to poor motility, food remaining in the stomach too long; fermentation and formation of organic acids. These were benefited by the addition of HCl. Many with achlorhydria without any organic disease improved more when liver extract or riboflavin was given in addition to the HCl.

Dr. Richard Allison and I have seen a number of cotton mill workers, whose diet consisted chiefly of pork, bacon, white bread, potatoes, cornbread, collards and turnips, with a secondary anemia, skin rashes of various sorts and little or no HCl. They responded poorly to iron and HCl, but when liver extract or riboflavin was added the response was great and the skin rashes disappeared.

It is reasonable to deduce therefore, that Vitamin B-2 plays large part in raising the level of HCl to normal. This is certainly true in pellagra. Other vitamins might have an important role in the normal function of the stomach and HCl is probably important in the absorption and utilization of the vitamins.

It appears to me that research workers should find it very interesting in determining the exact role of vitamins on gastric function.

Dr. J. S. Holbrook, Statesville:

I raise to say that these papers have been very valuable and to ask one practical question. In a number of cases Dr. Zemp mentioned the use of atropine. I have done the same thing. Sometimes I wonder if I am correct in doing so.

I would like to know about the use of phenobarbital along with atropine.

Dr. R. B. Davis, Greensboro:

I'd like some time for some essayist to write a paper entitled, If the Stomach Could Talk. I hope to hear that from a scientific body such as this. The stomach is one of the most sensitive organs that we have. It certainly is the most abused of all the organs of the body, and every investigator accuses the stomach of all symptoms of misdemeanor as determined at the time and under the same conditions as the examination. I believe the stomach to be subject to as many changes as the mind, and to be capable of so calm, sane and trustworthy performance as is the respiratory system. For any one to say he examined a patient and found hypermobility and therefore a certain disease exists, and another patient and found retention and therefore some other disease must be present, is to produce confusion. The family doctor will be able to calm the woman with indigestion by simply talking to her, whereas the specialist will have to perform all kinds of gymnastic didos and call into consultation pathologist, röntgenologist and ophthalmologist, and have in the end a patient with more indigestion than she had to begin with. We have hardly scratched the surface. Such discussions as these are much worth while, but let us never forget that the stomach of today is not the stomach of tomorrow any more than the headache this morning is the same kind of headache we had sitting up with a labor case last week.

Dr. F. B. Johnson, Charleston:

Dr. Caravati has brought to our attention a great many important points in regard to obtaining and interpreting the findings in gastric secretions.

I find medical students get a wrong impression from the usual text books of the importance of quantitative gastric analysis. It is very easy to get the idea from them that quantitative gastric analysis is of greater importance than it really is; that hyperacidity is always present in ulcer of the stomach or duodenum and that anacidity is always present in cancer of the stomach; that the presence of blood always indicates pathologic changes in the stomach.

A few years ago a study was made in my laboratory at the Medical College of the State of South Carolina by my associate, Dr. E. W. Townsend, of gastric examinations of medical students in good health. This was reported by her in the *American Journal of Clinical Pathology,* Sept., 1940. The alcohol test meal was used and fractional determinations made. In those cases in which there was no HCl response histamine was given. In response to the alcohol test meal 88.5 per cent of the students showed HCl present and of these 60 per cent had a HCl secretion of greater than the 50°, which is usually accepted as the highest point of normal secretion. The free HCl response to the alcohol test in these students varied from 0 to 97°. If the 11.5 per cent or seven students who failed to show free HCl present, in only one was HCl not prodoced by the response to histamine. This student was perfectly normal in every respect.

The absence or presence of free HCl is of most importance and not the quantitative determination. The determination of quantitative total acidity and combined HCl is of no practical importance.

In interpreting the presence of occult blood in gastric contents of the many things to be taken into consideration the chief is trauma produced by the tube, the next the method used for determination. The benzidine test is very delicate and is more apt to show positive test than the guaiac test in slight trauma.

Dr. Caravati, closing:

First, in reference to Doctor Zemp's discussion I would like to emphasize the fact that we, like others, have felt for years that the fractional gastric analyses were important and valuable and we did not abandon the use of this method for the study of gastric secretion until after a critical study of over 2,700 acid curves. We could not correlate our findings so as to believe that the data secured were significant We now believe that, except in extraordinary instances, a single extraction of gastric juice is as valuable as the time-honored, time-consuming fractional method. When you put a stomach pump down and find acidity excessive—say, from 80 to 90%—this does not mean that the patient should be put on a diet supposed to correct this hyperacidity. This is surely a normal finding in many individuals and does not deserve treatment.

In discussing the effect of vitamin B deficiency on the gastric secretion we have neglected to state our opinion as regards riboflavin. Experimental evidence seems rather conclusive that this radical of the B complex, as well as thiamine and the others, does not materially affect the secretory function of the stomach. Improvement in a patient's nutrition by the addition of ivtamin B factors to the diet may help his general health but will not necessarily change the gastro-secretory function.

As regards the finding of blood in stomach analyses, we feel that most often it has little significance, if any. The insertion of a foreign body, such as a rubber tube, into the stomach will often produce sufficient irritation to cause

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Address

Some Clinical Results With Benzedrine Sulfate in Obesity*

R. B. Chrisman, Jr., M. D., Camp Forrest, Tennessee
A Continuation of Research Done at John Gaston Hospital, Memphis

THE COUNCIL on Pharmacy and Chemistry of the American Medical Association has given benzedrine the non-proprietary name amphetamine.

Numerous authors have reported that benzedrine sulfate decreases appetite, and that this decrease is most marked in obese individuals. Nathanson[1] observed decreased appetite and weight loss in ten cases in which benzedrine sulfate was administered. Two obese patients treated by Ulrich[2] for narcolepsy had satisfactory weight loss during the first few months of therapy, and the loss was maintained after reduction and withdrawal of medication. These findings gave rise to additional studies. Lesses and Myerson[3] had good results in weight reduction from giving benzedrine sulfate in order to induce their patients to adhere to a low-calorie diet.

Similar results were reported by Rosenberg[4] who was able to discontinue medication in certain cases when new eating habits were established to prevent a subsequent gain of weight. Rosenthal and Solomon[5] had better results with benzedrine sulfate than with thyroid extract in conjunction with a reducing diet. They obtained reduction averaging 1.2 pounds a week for thirteen weeks in a group receiving benzedrine sulfate *without* dietary restriction. In another series they observed alternate gain or loss as the drug was administered or withheld.

Kunstadter[6] reported varying results in a series of thirty obese children receiving 5 to 50 milligrams a day. Tolerance to the appetite effect often developed in a few weeks, but there was usually renewed response to a larger dose. Although seven patients were refractory to treatment, the average weight loss of the entire group was .83 of a pound a week.

Recently Ersner[7] used benzedrine sulfate in more than 500 cases of obesity, and studied 55 cases of "pure overeating." In spite of five failures, the average weight loss was 3.2 pounds a week over periods of three to twelve weeks.

Two series of cases were studied by Maury and me—the first of which has recently been published.[8]

SERIES I

MATERIAL AND METHODS

Twenty-seven obese patients were selected. Those with cardiovascular, renal or hepatic diseases were excluded. This was done, not because we felt the drug would be detrimental to the patient, but because we desired to exclude every factor which might interfere with accurate evaluation of final results. All but one of the group were women, twenty-one of whom were charity patients treated at the John Gaston Hospital for various gynecological disorders. The others suffered from uncomplicated obesity.

All these patients had previously attempted weight reduction through dietary restriction. Thyroid extract had been tried in eleven cases. In nine of these it had failed to cause any loss in weight and was not well tolerated in one of the two in which it proved effective.

The initial dosage of benzedrine sulfate was 5 milligrams a day—2.5 milligrams fifteen to thirty minutes before breakfast, repeated fifteen to thirty minutes before lunch. The dose was increased by 2.5 milligrams every fourth day, but we did not give more than 20 milligrams during any one day. Other medication was given when indicated but only one patient received thyroid extract in conjunction with benzedrine sulfate. *No dietary restriction was imposed.*

Throughout the course of treatment all patients were seen regularly—usually at seven-day intervals—and investigated as to weight, blood pressure, pulse rate and endocrine function. After periods ranging from two to fourteen weeks (average seven), benzedrine sulfate was discontinued and the patients were given a diet from which *all* bread, potatoes, fats and foods having sugar artificially added, were excluded.

*Presented to the 44th Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greenville, S. C., February 23rd-24th.

RESULTS

The weight loss during benzedrine therapy ranged from nothing to thirty pounds, with an average of fourteen. The average rate was two pounds a week. The greatest weight loss and the greatest inhibition of appetite occurred from the second to the fifth weeks. Fat disappearance was noticed chiefly from the abdomen and hips. In spite of the unrestricted diet, most patients stated they had lost their desire to nibble or overeat. The two failures were in the cases of uncoöperative patients who suffered from nausea which they attributed to the medication. It was found, however, that the nausea continued after the drug was withdrawn.

Aside from curtailment of appetite, the effect most frequently reported by the patients was a sense of well-being and increased energy. The fatigue, lassitude and weakness so frequently attendant on reduced food intake was noticeably absent. In a few instances dysmenorrhea was relieved totally or partially.

No harmful effects were observed. A few patients had mild undesirable reactions at the beginning of treatment, such as sleeplessness and dryness of the mouth, but these symptoms did not warrant discontinuing the drug and they soon disappeared entirely. There was no significant change in blood pressure, pulse rate, or endocrine function.

On the maintenance diet prescribed at termination of benbedrine therapy the weight of most patients remained fairly stationary. Placebos were given in five cases at the conclusion of treatment without dietary restrictions. Four of these patients gained from 1.5 to 6 pounds in five weeks and the fifth lost 0.75 of a pound.

SERIES II

MATERIAL AND METHODS

In the second series nineteen adult patients, fifteen of them women, were chosen for the investigation. None of these was a charity case. These were selected without any physical restrictions. All were obese and desired to lose weight, or it was considered that weight reduction was essential to the best management of the condition for which treatment had been sought. Two men and seven women had received thyroid extract in an effort to reduce their weight. In eight of the nine cases, self-medication had been practiced. In none of these cases had the desired result been accomplished. Six of the patients complained of side reactions which made the drug intolerable, even in small doses, after seven to fifteen days.

The patients were given the dosage schedule of benzedrine sulfate outlined in the first series. *No dietary restriction was imposed.* The same precautions and check-ups were made with this group and the drug was given over the same length of time; that is, from two to fourteen weeks with an average of seven. Identical dietary instructions were given after medication was discontinued.

RESULTS

The weight loss in the second series ranged from nothing to 38.5 pounds. The average weight loss was 13 pounds—1 pound less than in Series I. The average weight loss per week was 2.5 pounds—0.5 of a pound more a week than in the first group. There were two failures without known cause. All patients experienced diminution of appetite.

It was interesting to find that the headaches, which had been experienced frequently by three of the patients, were not present at any time during the administration of the drug. No nausea occurred and no harmful effects were noted. Basal metabolic readings were within normal limits before and after treatment in four patients. All but five patients had complete blood counts and urinalyses before and after treatment with no appreciable changes. Pulse rates and blood pressures were apparently unaffected.

In the second series, as in the first, all patients noted a sense of well-being, improvement in mood, and ability to do more work with less fatigue. There was no habit-formation experienced; all patients willingly discontinued the use of the drug when requested to do so. Prescriptions from a licensed physician were required to procure the drug.

COMMENT

We do not pretend to know all of the factors involved in causing the weight loss produced as a result of benzedrine therapy. This result has been variously attributed to augmented activity, delayed emptying of the stomach, diminished peristalsis, improved mood, inhibition of water retention, as well as to a direct effect on the appetite mechanism.[3 4 5] In our series of cases we saw no indication that the weight loss involved other factors than these. We, therefore, believe that the effectiveness of benzedrine sulfate in obesity is due to its central attack; that is, it reduces the abnormal appetite by way of the appetite mechanism, probably through hypothalmic stimulation; and it reduces the desire to nibble by improvement of mood, likely by cortical stimulation.

Although weight reduction was accomplished without other treatment than benzedrine sulfate, it is not suggested nor even hinted that the drug is a specific. Our patients *wanted* to reduce and the medication enabled them to do this without great difficulty; many had found this impossible with other measures. It is significant that four out of

five patients, relying on benzedrine sulfate, gained weight when placebos were substituted.

In brief, benzedrine sulfate appears to be indicated for patients who are unable to adhere to a dietary regimen and who need help while being taught dietary restriction. It is obvious that the administration of benzedrine sulfate, *plus* dietary restriction, is more effective than either alone.

The permanency of weight loss varies with the individual. Benzedrine sulfate enables the patient to adhere to a low-calorie diet and with proper instruction it will enable the patient to establish better eating habits.

SUMMARY

Forty-six obese patients desirous of losing weight were given benzedrine sulfate in regulated dosage on definite schedule, without dietary restriction for periods ranging from two to fourteen weeks. The average weight loss was 2.19 pounds a week with the total loss ranging from nothing to 38.5 pounds. There were four failures.

Unfavorable reactions were mild and transitory. There were no significant changes in blood pressure, pulse rate, blood counts, urinalyses, or in basal metabolic readings.

In a series of charity and non-charity patients the results obtained by use of benzedrine sulfate were comparable.

Most patients reported a decrease in appetite, increased energy, improvement of mood, and a higher threshold for fatigue.

Benzedrine sulfate is not thought to be a miracle drug; but it is considered, chiefly by virtue of its central action, an agent of great value in doing away with that "too, too solid flesh."

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DRUGS IN CARDIOVASCULAR DISEASES

(A. C. DeGraff, New York, in *Bul. N. Y. Academ. of Med.*, April)

Digitalis chief use is in the treatment of congestive heart failure. It is at times useful to control the rapid ventricular rate of auricular fibrillation without heart failure, and to reduce bothersome ventricular premature contractions. There should be a preliminary period of bed rest until weight is constant. After digitalis is given the weight loss is charted, also the ventricular rate and physical signs in auricular fibrillation. The initial digitalization must be made rapidly.

All preparations of digitalis should be tested on man because even the cat assay, although closer than the frog assay, is occasionally off. There is no constant relationship between the therapeutic and toxic doses of digitalis, and the electrocardiographic changes.

Mercurial diuretics are essential drugs in the treatment of congestive heart failure not responding to digitalis, and in dyspnea without edema. Fluid accumulations due to cirrhosis of the liver, thrombophlebitis, or abdominal neoplasms may be diminished. Theophylline with the mercurial salt prevents necrosis at the site of injection, and promotes more rapid and complete absorption. The intravenous route is most effective.

Increasing albumin, casts or a greater number of red blood cells are danger signals. Very rarely a patient may suddenly go into shock or even die shortly after an intravenous injection of a mercurial diuretic, probably due to ventricular fibrillation.

1. Never use more than 2 c.c.
2. Draw up blood into the syringe before injection and then take plenty of time to inject.

Mercurial diuretics are more effective if ammonium chloride given at the same time, best in enteric coated capsules.

Of the nitrites, nitroglycerine is still pre-eminently the best. The nitrites relax all smooth muscle—in the bronchi, in the biliary tract and in the intestine, if spasm is present. Relief of pain, therefore, when nitroglycerine is used does not pre-suppose the presence of coronary artery disease.

There is considerable doubt as to whether aminophylline is of value as a coronary vasodilator in man.

SPOOL COTTON AS A SUTURE MATERIAL

(Phil Thorek, Chicago, in *Amer. Jl of Surg.*, Jan.)

Cotton is inexpensive; when mercerized—treated with potassium hydroxide—it has an increased tensile strength.

Cotton fibers have a natural tendency to twist upon themselves; silk and linen fibers do not. This twisting prevents fraying and makes it difficult for leukocytes and granulation tissue to make any appreciable ingrowth into the sutures.

Cotton sutures are easily sterilized by autoclaving for 10 minutes at 15 lbs., or boiling for 20 minutes. When wrapped on ordinary rubber tubing cotton does not lose tensile strength during sterilization.

At the Cook County Hospital size 24 cotton has been used for every purpose with no ill effects. Size 80 is now used for subcutaneous ligatures and sutures, size 50 for seroserous sutures—interrupted sutures only, and cut as close to the knot as possible.

We have abandoned silk and linen as suture materials.

HEARTBURN—Among 16 patients with severe heartburn treated with a single dose of prostigmin one was not benefited, 14 were made comfortable or entirely relieved within 24 hours. In half these cases the distress gradually recurred in from 7 to 10 days. A second dose proved as effective as the first. By repetition of the injections these patients were kept free of the symptom with no untoward results.

—N. H. Williams, *Amer. Jl Obs. & Gynec.*

Vaginal Hysterectomy in the Treatment of Uterine Prolapse*

G. T. Tyler, Jr., M. D., Greenville, South Carolina

INTRODUCED by Schauta for the operative relief of cervical cancer, vaginal hysterectomy has now come to be used almost exclusively for benign conditions; and is the choice of many surgeons where the uterus is to be removed; especially after the patient has passed the menopause. Its most frequent use is for uterine prolapse, either congenital or acquired. In any discussion of hysterectomy, a total or a subtotal operation must be decided upon. Should a total operation be the choice, then the question arises whether it is to be done by the abdominal or the vaginal route.

Let us consider some of the conditions where vaginal hysterectomy is preferable. In a discussion of this question Richardson mentions several factors. In elderly women, those over-weight, with thick abdominal walls; those with diabetes, hypertension, anemia, malnutrition; those with relaxed vaginal supports. He might well have added the selection of the anesthetic; for it is often possible to operate in this field under low-spinal, sacral, or even infiltration anesthesia. The uterus must be freely movable (Heaney). Those patients with associated abdominal disease, pelvic inflammation with its results, appendicitis, large fibroids, ovarian tumors, endometriosis, infections about the introitus, and those with ano-rectal disease, should have laparotomy. If the abdominal approach is used, often a vaginal operation must be added. There are definite indications for this combined operation; but to those skilled equally in both methods, these cases are few. Goodall, of Montreal, has little if any experience with the vaginal route; while Babcock, of Philadelphia, in 1932 stated that 90 per cent of his hysterectomies were vaginal. He uses Schuchardt's pararectal incision when adequate exposure is required. Heaney, of Chicago, uses this (vaginal) method almost exclusively. He says it should not be attempted if the patient has had previous pelvic surgery, especially by laparotomy. His mortality is 1/3rd of 1 per cent in several hundred cases. He never uses Schuchardt's incision; but episiotomy when necessary for better exposure. Vaginal hysterectomy is not done in this country so often as in European clinics. There are several techniques: the Goffe-Mayo, the Schauta, the Halban, the Kennedy, and several others. All have been reported successful.

Since vaginal hysterectomy is done most frequently for uterine prolapse, the greater part of this discussion will be devoted to establishing its place in relieving this condition. Other popular operations are the Manchester method, used first by Donald in 1888; interposition, introduced by Watkins in 1899; subtotal vaginal hysterectomy, described by Richardson in 1937; colpocleisis, the LaForte technique, an old operation, dating I believe from 1876. Colpectomy is a more recent method. These last two are seldom used except in very old patients, where retention of the vagina is no longer a consideration.

The essential idea in prolapse of the uterus is that a hernia exists. Operation planned without attempting a radical cure courts failure. Cystocele, enterocele, rectocele, one or all, may be present with prolapse, which is congenital or acquired as the result of childbearing. The pelvic floor is made up of the levator ani and the coccygeus muscles, broad sheets arising from the anterior, lateral and posterior walls of the pelvis, and converging toward the mid line, where the urethra, the vagina, and the rectum are interposed with potential weakness of the floor. Above and below these sheets of muscles are fascial planes. The upper plane is thickened in certain areas, enclosing bundles of muscular, fibrous, and elastic tissue, called ligaments. They are the round, infundibulo-pelvic, broad, and utero-sacral. The pubo-cervical ligaments, extending from the pubes to the cervix, and and not covered by peritoneum (all the others are), support the bladder. These last three suspend the cervix, permitting slight motion. They, especially the broad ligament, are distributed fan-wise over the upper vagina and the cervix, interlacing. The name broad ligament is sometimes given to all those from one side. The round and infundibulopelvic ligaments are responsible for the anterior-posterior position of the uterine body.

To test which of the supports are responsible for maintaining the uterus in the pelvis, Mengert attached a 2-pound weight to the cervix in 8 cadavers known to have no weakness of the pelvic floor. He then divided the ligaments from above down in varying order. Only after the lower 2/3 of the cervical, and the upper 2/3 of the vaginal ligaments (the broad ligaments) were divided was he

*Presented to the 44th Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greenville, S. C., February 23rd-24th.

able to pull the uterus 10.5 cm. below its position. He thought the vaginal portion the stronger. The pelvic floor did not hinder prolapse. His conclusions are that the parametrial and the paravaginal ligaments are the true supports that prevent vaginal hernia. This experiment, while suggestive, is not conclusive; for the dead muscle is without tone; the levators are separated in pelvic relaxation; they are always united in its repair. Again the elasticity of the uterine supports is gone. That is a factor in their action. But it does demonstrate that the round and infundibulo-pelvic ligaments have no part in this support. Laws found occult spina bifida with impairment of the nerves supplying the levators in several instances of congenital prolapse. Weakness of this muscle, especially in the over-worked, malnourished patient, was responsible for prolapse and for recurrence after operation. This is an argument in favor of the levators as partners in uterine support. Relaxation of the utero-sacral ligaments permits the peritoneum between them—the pouch of Douglas—to deepen; as is evidenced by bulging of the vaginal vault—enterocele.

Vaginal hernia is of first degree when the cervix is at the introitus; second degree when it is outside; and third degree when the entire uterus is outside the body. Frequently the cervix is elongated. It is said to be everted, infected, or hypertrophied in 80 per cent of the cases. The uterus also is frequently abnormal—boggy, fibroid, or the endometrium may be affected. Some patients have had radium with pyometra resulting. There is the sclerotic uterus that bleeds in spite of radio-therapy. Malignancy must also be considered. Goff says that the uterus is pathological in 80 per cent of the patients.

Symptoms: A feeling of fulness in the pelvis, pain in the lower abdomen and back, incontinence, dysuria, nocturia, vaginal discharge, constipation, and maybe hemorrhoids, are the most frequent When prolapse of the bladder is marked, the womb must be replaced before the patient can void. Instances of kinked ureter with pyelitis and hydroureter are reported.

Treatment for relief of fallen womb dates from earliest history. But only within the past three-fourths of a century have operations for its relief been successfully done. Where possible, operation is by far the better procedure. If the patient's condition precludes—fortunately this is rare—a pessary must be used. Few of the patients I have seen prefer this form of therapy. The Manchester operation amputates the cervix, removes excessive anterior vaginal wall, pushes up the bladder from the uterus, unites the pubo-cervical ligaments, the stitches including the uterus if it has been retroflexed. The peritoneum is not opened. The perineum is repaired. This operation was described by Shaw in 1933. He reported its use with only slight modifications over a period of forty-five years at the Manchester clinic. He has records of over 2,000 private cases. The results have been uniformly satisfactory (96.35% successful); the morbidity almost nil; the mortality very low (a fraction of 1%). It can be done in young women as well as in those of the menopause age. Pregnancies are not precluded; but are advised against. In Shaw's well-illustrated account, he does not mention enterocele; but speaks of a lax posterior fornix, which he believes can be relieved by carrying the colporrhaphy higher. He uses this operation for all degrees of prolapse. The method is slowly gaining popularity in this country. Gordon, Frank, Cullen, Salmon, Frost, Lowenthal, and others have used it with excellent results in all degrees of prolapse. Recurrences are fewer than after any other operation for this condition.

Interposition is popular in America. Contraindicated except after or near the menopause—when the patient must be sterilized—it has many supporters from the best clinics. After a thorough dilatation and curettage, the cervix is amputated; the bladder separated from the uterus, especially to the sides; the peritoneum is opened; the uterus delivered; the bladder peritoneum stitched to its posterior wall—not too far back; the cornua are sutured beneath the pubes; the vaginal wall closed and a perineal repair done. Phaneuf, Cullen and many others prefer this operation. Baer and his associates at the Michael Reese Hospital, Chicago, endeavoring to improve their results from interposition in a five-year period, tried vaginal hysterectomy for five years. The number of cases was about the same, and the operators were of the same school. From interposition, their success was 89.5 per cent; but only 70.7 per cent from vaginal hysterectomy. They concluded that only when the uterus is suspicious of malignancy is hysterectomy indicated. Their morbidity was less with interposition. Their report is convincing. Brady reported 93 per cent success in 48 cases of Cullen's. Fallon reported 465 cases with 2.2 per cent mortality. Danreuther listed as complications from interposition cystitis, bladder stone, cancer, fibroids, pregnancy. If the peritoneum is tacked too far down on the uterus, and the cornua not sutured to the pubes, the fundus causes an elevation of the trigone, with pockets behind, and on the sides. Here there is residual urine; and stones form. The patient must be sterilized. Since fibroids occur in young patients before the menopause, they should not have this operation. The uterus must be of normal size. Atrophy will induce recurrence. An

atrophic uterus should be removed. I have used interposition only to cure cystocele.

Vaginal hysterectomy has the advantage of removing entirely a uterus that is functionless. If the pelvic supports can be reconstructed, certainly the patient has greater benefit; but some of the best clinics report recurrence of hernia in 30 per cent of the cases. Morbidity is greater, as high as 50 per cent in some clinics. Conversely, Goff, of the Woman's Hospital, New York, reports 98 per cent of success in their cases. George Gray Ward, who modified the Goffe-Mayo operation by removing the cul de sac of Douglas and uniting the utero-sacral ligaments; Bissel, Babcock, Heaney, Kennedy, Danforth, the late Jeff Miller (Tyrone reports 311 cases with 2 deaths from his clinic), the Mayo clinic, all report good results, and prefer this method. It is essential that the cardinal ligaments be united, Douglas pouch removed, the utero-sacral ligaments sewed together, and the top of the sutured broad ligaments be stitched to the pubes; and that the pubo-cervical ligaments be included in the sutures attaching the anterior vaginal wall to this bundle. Others suture the cardinal ligaments to the vaginal vault on each side. A perineal repair is added.

Richardson, in 1937, because of a 30 per cent recurrence at Johns Hopkins, modified this operation by cervical amputation, vaginal sub-total hysterectomy, and suture of round ligaments to the top of the residual uterus. The features of the Manchester method complete the operation. In a recent communication, he reports continued success with it. Enterocele is removed if found.

After reading this paper, I recalled my patients for reëxamination. None had died from the operation. Those who returned had a well-supported pelvic floor. There was no residual urine.

Morbidity in these pelvic operations, chiefly cystitis, is due to trauma of the bladder. Fine carbon particles injected about the cervix soon appear beneath the mucosa of the trigone; showing how readily infection is carried. Accumulation in the pelvis from blood clots can be prevented by draining. Infection is probably the result of insufficient cleansing of the operative field. Kennedy, Richardson, Heaney and others stress the importance of an elaborate cleansing technique. I for one plead guilty of erring in this detail. It can hardly be over-emphasized.

In the original colpocleisis, a quadrangular denudation of the anterior and posterior vaginal walls extending down on the cervix was done. The edges were united in such a manner as to occlude the vagina except for a narrow channel on each side. This was later modified to a triangular denudation and suture; the apex pointing outward. The vagina is not occluded in this modification. Colpectomy is also successful when it is used.

In all cases of incontinence, the Kelly method of plicating the sphincters of the urethra near the meatus is employed.

I have not mentioned prolapse of the cervix after suspension, prolapse of the cervical stump, removal of large fibroids by morcellation; nor recurrence of the hernia. There are other conditions where hysterectomy by the vaginal route can be used.

In presenting this subject, I have tried to appraise vaginal hysterectomy. Its place is assured. In the treatment of prolapse, other methods have given equally good results, with lower morbidity and mortality. Its success in properly selected cases will be just as great as the judgment and the skill of the surgeon.

Discussion

Dr. George H. Bunch, Columbia:

In hysterectomy, as in other operations, the method should be adapted to the patient. There should be no method used as a routine in every case. The kind and the extent of the disease process present, the age, the build and the general condition of the patient should be determining factors in selection. The vaginal method has definite advantages and as definite limitations which must be understood to be applied to the best interest of the patient. In properly selected cases vaginal hysterectomy is easy to do, safe and satisfactory; in improperly chosen cases it may be difficult and very hazardous. In a suitable case postoperatively there is less shock, less pain, less reaction and less danger from infection than from any other major abdominal operation.

The ideal case for vaginal hysterectomy is that of the elderly patient with loss of muscle tone, loss of perineal support, with torn relaxed perineum, with cystocele, with rectocle, with uterine prolapse. Such a patient cannot be cured by any suprapublic operation.

Contraindications to vaginal hysterectomy are pelvic inflammation, pelvic tumor, fixation of the uterus from any cause. The vaginal operation has two serious disadvantages which should limit its application. One is the impossibility of satisfactorily exploring the abdomen through the vagina and the other is we can not control hemorrhage from the broad ligament stumps from below, if the ligature on the stump breaks or slips. Catgut should be large enough and strong enough for mass ligature. After the uterus has been removed and the uterine ligaments from each side have been sutured to those of the other side under the bladder, we also suture them to the peritoneum of the pubic bone on each side to give additional support to the bladder.

Patients all complain of pain after perineal repair so that perineorraphy sutures should be pulled only tight enough to approximate the tissues.

Dr. R. B. Davis, Greensboro:

I have been asked by the Secretary to take Dr. Bost's place. Dr. Bost is sick and is unable to be here.

It is likely that we should use this operation more. Some of us do not practice it to any great extent. A fear-complex keeps the average surgeon from doing it. He has had experience that creates in him an apprehensive feeling when he approaches a task that he has done or seen done with bad results. The bugbear in vaginal hysterectomy has been infection, and infection caused by the very nature of the site of the operative procedure with already an abundance

of bacteria of many kinds. The sulfonamides will probably help to overcome that fear-complex because we now know, even though we are messy in our work, that we can give the sulfonamides and prevent many infections.

The matter of hemorrhage has not yet been solved because this work is to an extent in the dark and it takes much more skill to do hysterectomy vaginally than abdominally. We become proficient by practice and if, in the beginning of your surgical career, you have had bad luck, with a certain operation you never become proficient thereafter because you don't try; a fear-complex forbids. Dr Tyler has learned to solve this problem of hemorrhage and has no fear-complex to hinder him.

If we get from Dr. Tyler's paper the wisdom of choice of operation, it will certainly have to do with success as a skillful surgeon. I enjoyed it, and I believe I will have more courage now and I believe I will try to do more vaginal hysterectomies than I have in the past.

DR. TYLER, closing:

I thank the gentlemen for their remarks and first of all, I want to say that no discussion of this subject would be complete without using the names of Dr. George Gray Ward and his associates at Woman's Hospital in New York, all those members of the staff of that great institution.

Now inability to explore the abdomen, of course, is a factor unless you do like Dr. Heaney, of Chicago, or Dr. Babcock, of Philadelphia. Dr. Heaney explores the abdomen, or certainly the lower part of it, very effectually. Dr. Babcock reports that he has removed tumors by morcellation over a period of 7 months by the vaginal route. I wouldn't want to try it.

Now hemorrhage is the real consideration. I will reply to Dr. Bunch and Dr. Davis. Dr. Davis mentioned the fear-complex. Well, don't think, Doctor, that I am free from it. I have had a great deal of trouble stopping bleeding in the uterine arteries. I first try to ligate the uterine with clamps on. On one occasion in doing a hysterectomy I couldn't control that bleeding otherwise and had to leave the clamps on.

Dr. Kennedy, of the Joseph Price Hospital, almost whacks out the uterus. You see him do it the short and quick method, but he leaves the clamps on 48 hours, then unlocks them, and later takes them off. In the case in which I couldn't control the hemorrhage otherwise, I did that and to my agreeable surprise no further bleeding occurred. We examined the patient later and didn't have to do perineal repair because she declined. The vaginal wall held away up. I am grateful that it was. It is a real fear and I think the reason here is that we are not elaborate enough in our work. At the Joseph Price gallons and gallons of water are used. They use to clean out all areas and make them as sterile as possible. Some of you who have seen Dr. Kennedy know that he doesn't use gloves; yet he gets along. He takes out the uterus and leaves the clamps on and in two or three weeks does a perineal repair. It requires a long stay in the hospital. Dr. Heaney's patients remain about 12 days. I usually keep a patient about two weeks. I feel that the operation has an important place in properly selected cases, that in a considerable proportion of all cases of prolapse vaginal hysterectomy it has most of good to offer.

GASTRIC SECRETION—Caravati

From Page 199

mild bleeding. This has been proven rather convincingly by Ruffin, at Duke, who has noted that individuals whose stomachs have been lavaged before gastroscopic examination showed much more tendency to bleed than those who have not had this trauma.

In answer to Doctor Holbrook's questions, atropine does not change materially the gastric secretory function. It does alter the motor function and it is probably true that most gastric symptoms are due to change in its motility. Contracting smooth muscle waves and spasm are important factors in the production of abdominal pain. Atropine is valuable in the control of it and this you may give to the point of toxic symptoms and a large dose is usually required before real benefit is achieved. Ordinarily patients will tolerate 15 to 20 minims of the tincture of belladonna t.i.d. Begin with a small dose and increase to the point of tolerance. Phenobarbital or other sedatives are of great assistance in conjunction with the antispasmodics in the control of gastric symptoms.

I want to emphasize what Doctor Davis expressed, that the gastro-intestinal tract mirrors in a reflex manner disturbances of the general nervous system. In many individuals complaining of indigestion it will be found that their symptoms are due to some functional digestive disturbance and not to secretory changes as so often has been stated. I would like to again point out that our dogmatic statements as regards the value of the chemical analysis of gastric secretions are based on clinical findings in private practice rather than upon material obtained from clinic patients. We do not feel, however, that the findings will be significantly different if closely analyzed.

I want to thank the members of the Tri-State for their helpful discussion.

THE PLACE OF ELECTROCARDIOGRAPHY

(M. W. Barry, Omaha, in Nev. Med. Jl., Mar.)

There are many instances in which satisfactory conclusions can be reached without its use, and others in which the information could better be obtained in other ways.

In earlier days electrocardiography was used chiefly in the study of cardiac arrhythmias and due to this study *most of them can now be classified by clinical study alone.* Some require ecg. for proper classification. The more skillful the clinician the less he will be obliged to rely on the electrocardiogram.

Some cases of rheumatic fever develop as an unexplainable fever. The ecg. may show cardiac involvement, thus making the correct diagnosis before it would be possible otherwise. The ecg. is of value in other acute infectious diseases in childhood in enabling one to recognize cardiac involvement.

In very early cases of coronary sclerosis the ecg. may yield evidence some time before signs or symptoms, and in confusing coronary sclerosis whether an anterior or a posterior branch of the coronary is occluded, whether or not the lesion is healing. It is useful in learning the extent of digitalization.

PRIMARY CARCINOMA OF THE LIVER is very rare amongst all white-skinned races irrespective of geographical distribution, whereas it is common amongst most pigmented races, particularly the Bantu, the Javanese and the Japanese. In the Bantu it is largely an affection of young adult males.

The view that cirrhosis of the liver is an intermediate stage in the evolution of cancer is substantiated. Multilobular cirrhosis was an accompaniment in every Bantu case studied, and in 73% of cases recorded.

The chief toxic agents apparently concerned in the production of cirrhosis are indicated. In the Bantu these include helminthiasis, malaria, schistosomiasis haemochromatosis and alcohol. Amongst other races additional factors considered are infestation with *Taenia echinococcus, Opisthorchies felineus* and Clonorchis *sinensis.* —*Chas. Berman, Johannesburg,* in *Sou. African Jl. Med. Sci., Nov.*

Deficient Cardiac Nutrition A Factor In Hypertrophy

W. A. Anthony, M.D., Gastonia, North Carolina

THERE seems to be some factor besides work and strain which causes cardiac hypertrophy. Patients with long-standing hypertension often show very little cardiac enlargement; yet we see other patients with hypertension that is not so high with a marked hypertrophy. This also holds true in valvular diseases. From observations it must be concluded that there is another factor besides work that aids in the production of cardiac hypertrophy.

It seems that a lack of nutrition to the heart muscle could be a factor in cardiac hypertrophy. The heart has a definite amount of work to perform at all times. It will be assumed that, due to disease or to heritable factor or factors, not enough blood is furnished to the heart muscle for it to perform its work efficiently. This deficiency may be a lack of either quantity or quality. If the blood supply is deficient, and the heart must do a certain amount of work, then a compensatory effort takes place which may be the beginning of hypertrophy.

Naturally the question arises, what is this compensatory effort of the heart? It has been already stated that there is always a definite amount of work the heart must do. Of course the amount of work required varies in ratio to physical exertion of the patient, or to disease with its associated pathological changes. For the performance of a certain amount of work a certain amount of energy is required. When this requirement is not adequately and normally met with each systole it seems that a biochemical change in the heart cells makes the requirement up to normal.

It seems the next step in this speculative phase of the cardiac hypertrophy would be to attempt to show how a lesion or condition could impair cardiac nutrition. To do this it might be wise to first consider the blood supply of the heart under normal conditions. In systole the blood moves from the contracting left ventricle through the aortic orifice; the falling column of blood in the ascending aorta is prevented by the aortic valves from regurgitating back into the ventricle during diastole. The sudden stopping of the falling column of blood by the aortic valves causes the coronary vessels to be filled. Then as pressure becomes stabilized during diastole there is a constant pressure during the latter part of diastole. Theoretically the variation of pressure in the aorta should be synchronized with the contraction and the rest periods of the heart. The pressure should be greatest at the orifices of the coronaries, just as the muscle fibers of the heart are beginning to relax at the beginning of diastole and be stabilized during the rest period.

It seems that the structure of the aortic valves, location of the coronary orifices and the method by which they are opened have a great deal to do with coronary circulation. The orifices of the coronaries are located almost in the center and behind the anterior and left posterior valves. Now in systole the valves are compressed against the wall of the aorta. This action causes the valves to cover the orifices of the coronaries. The pressure of the flexible valve against the orifice of the coronary varies in direct ratio to lateral pressure in the aorta during systole. By this action the peripheral moving column of blood is prevented from drawing the blood out of the coronary vessels. This valvular action would also keep the blood from being forced from the heart during systole. Thus it seems the location and action of the valves should keep the heart from becoming depleted of its blood supply during systole.

It might be wise to consider how the pathological changes in aortic insufficiency would be a factor in cardiac nutritional hypertrophy. Assuming that the aortic cusps are diseased to the point of a more or less complete insufficiency, the coronary circulation is materially lessened with impairment of the nutrition of the heart structures. This change from the normal action in systole would cause a large, swift peripheral-moving column of blood to pull blood from the heart muscle, because the aortic cusps were not able to seal over the coronary openings.

In diastole, instead of the volume of blood from the aorta being stopped at the level of the coronary orifices, the blood would fall back into the left ventricular chamber as it dilates. This would cause an insufficient filling of the coronaries during diastole. Thus it seems that during systole, due to the lack of function of the aortic cusps blood is drawn from the cardiac muscle; whereas in diastole there is an insufficient supply to the heart muscle because of the inability of the cusps to perform their normal physiological action.

With an insufficient blood supply in systole and diastole compensation would in all probability take place. The most logical change that could

take place would be the one that would enable the cardiac cells to utilize more of the available nutrition than they are normally called on to do. For the cardiac cells to do this an increased osmotic tension would be brought into effect by increasing the intracellular solutes. If this were to take place the cardiac cells would gain in the removal and replacement of interstitial juices. Let it be supposed that this readjustment does take place in the cardiac cells, then it would be logical to deduce that these cells would become larger, more numerous, or both. Increase of the intracellular osmotic pressure causes the cells to imbibe more fluid and enlarge in direct ratio to the amount of fluid imbided and a greater residue retained due to this disturbed water metabolism.

In aortic stenosis, although the pathological change in the aortic cusps is different from that in regurgitation, it seems that the nutrition of the heart could be affected in the same way as in regurgitation. Therefore, it seems unnecessary to go in for the cause of hypertrophy in this condition.

The next common cause of cardiac hypertrophy is hypertension. It has been my observation that those individuals who have a long chest and a vertical heart more centrally located have less hypertrophy than do those of the sthenic type with high diaphragm and a diagonal or transverse position of the heart. The aortic valves of vertical hearts should carry out the function already described much more efficiently than those of the more transverse types of hearts. In the former the blood would be ejected in a nearly straight line from the heart to the aorta and the aortic cusps would seal over the coronary orifices in systole. In diastole the cusps would more adequately prevent a regurgitation, and thus, amply supply the coronary vessels, allowing the cardiac muscle to receive its circulation in ample and normal manner.

In the more transverse heart the blood would be ejected from heart to aorta at a considerable angle, producing an eddy in the proximal part of the aorta. This could prevent the cusps from sealing over the orifices of the coronary in systole. Both the squeezing action of the heart in systole and the peripheral moving column of blood should deplete the coronaries of blood. Then in diastole it could be argued that, due to the angle of back pressure, the aortic cusps could not function synchronously, so there would be a regurgitation, probably not to be apprehended by the stethoscope. If these conditions take place then the part played in nutritional hypertrophy could be the same as in valvular diseases already discussed.

Mitral disease might be explained somewhat as the condition already mentioned. In all probability the disease affects the heart cells primarily. The infection and its associated toxicity may disturb the normal nutrition in such a manner as to be a factor in hypertrophy. In coronary occlusion, the process is essentially the same. The disturbance is due to thickening and lack of collateral circulation. Then there is an area of scar tissue due to occlusion.

The practical application may not be of any importance. If it could be soundly substantiated that lack of nutrition plays a part in cardiac hypertrophy and is brought about along the lines mentioned, then a technique in surgery could probably be devised for correction in the coronary blood supply. Already muscles have been grafted to the heart in an endeavor to supply adequate blood.

In conclusion it must be stated that most of what has been said is purely theoretical, coming as it were from a voice crying in the wilderness.

—Medical Building

VICTORY FLAG RAISED OVER ROCHE PLANT

Hoffmann-La Roche Goes For Defense-Bond Payroll Deduction

The 1,200 employees of Hoffmann-La Roche, Inc., enthusiastically hailed the raising of a Victory Flag today over their plant in Nutley, N. J., symbolizing the adoption of the payroll deduction plan for the purchase of Defense Savings Bonds by the entire personnel.

The ceremony started with the singing of "America," then a brief talk by Mr. Elmer H. Bobst, President of the Company, who congratulated the employees on their unity in thus supporting the men on the firing line and stated that their bond purchases would total over $100,000 a year. He pointed out that a number of the company's own men were already serving the colors or were about to go and that Roche was doing its utmost in turning out more and more vitamins and medicinal preparations for the armed forces and civilian populations of the United States and its Allies. A bugler then played "To the Colors," the flag was raised, and everyone joined in the singing of "The Star-Spangled Banner."

A good percentage had been participating in this method of Bond purchase before Pearl Harbor. Hoffmann-La Roche is one of the first companies to adopt the payroll deduction plan for the purchase of Defense Bonds. At that time, some employees had preferred to buy Defense Stamps on a weekly cash basis but now all have enrolled in the deduction plan.

High lights of Mr. Bopst heart-stirring talk:

"Everyone of us has a part to play in winning this war. Many of our men will meet the foe on battle fields, in the air, and on the sea. These men are going forth to risk their lives. Many of them to lose. Let us, who stay behind, do our part. We can do it by working and giving. Remember, the products you are making—vitamins and medicines, are essential to the winning of this war. Just as essential as munitions, airplanes, tanks and battleships. Our job is to keep our men in uniform, makers of munitions, growers and those of our allies too, well and fit. And so let us work as we never worked before—let us give as we never gave before, and let us root as we never rooted before, for our men to win."

Balsam of Peru ointment 12%, and betanaphthol 5% is a satisfactory alternative to sulphur in the cure of itch.

CLINIC

CLINICOPATHOLOGIC CONFERENCE, NORTH CAROLINA NEUROPSYCHIATRIC SOCIETY

Charlotte, March 27th

Clinical Discussion by FREDERICK R. TAYLOR, M. D., F.A.C.P., High Point, N. C.

THE RECORD—In general, the most important item in the investigation of a clinical problem is an accurate, thorough, orderly history. The record which has been furnished us for discussion lacks something of completeness, and one of these instances of lack that is not clear may be a typographical error. Moreover, the record states that the patient had enjoyed good health until four days prior to admittance to the hospital, and later that she had not been well for some four months before admission. It seemed advisable, to rewrite the record, in chronological order.

The Problem.—A 49-year-old white, single schoolteacher was admitted to the hospital early in November, 1941. The first accessory clinical findings are dated Nov. 3rd. She had been unwell for 4 months. She attributed her symptoms at first to the menopause. Three months prior to admission she had an explosion-like sensation in her right ear, followed by soreness of the muscles of the right side of her neck and right upper arm. For several days after this, in the erect position, she felt nauseated at times, and was weak, nervous and restless. She had some vague dull headaches, usually in front and back, relieved by 5 grains of aspirin. She was able to resume teaching when school opened in September, but did not feel well. She continued to teach until the day before her admission to hospital. However, for several days before that, she had a little difficulty in the picking up small objects with her right hand. Three days before admission she noticed weakness in her right hand which increased rapidly, so that she consulted her physician. The day before admission to the hospital, a lumbar puncture was done, results probably negative, for nothing abnormal was found except blood, which was considered due to trauma, as subsequent punctures failed to show blood. The next morning she had "a *right* Jacksonian seizure involving her upper extremities", an occurrence, difficult to understand. The attack lasted several minutes without loss of consciousness. She had two more attacks the same day and was admitted to hospital that day. Her blood pressure right after a fit was found to be 170/80, but shortly afterwards it was 140/75, and, as she was not known to have had hypertension before the seizure, it seems probable that it was due to the attack.

Physical examination showed moderate weakness of the right upper extremity and the right side of the face and tongue, with hyperactive reflexes on the right side, including the knee-jerk. There is no statement as to forehead wrinkling, but it is safe to assume a *central* facial paralysis. There is no evidence of damage to the cranial nerves *per se,* as eye movements, vision, hearing, etc. were reported as normal. There was asterognosis of the right hand and "loss of sense of position of the toes," (of the right foot.) Perhaps someone can inform us regarding this point. There was said to be "hypalgesia of the right extremity," whether upper or lower is not stated.

A small, tender, apparently movable mass was felt in the left breast.

During a 10-day period two or three Jacksonian attacks occurred with involvement of the right *lower* extremity without loss of consciousness. "She had increasing paralysis involving the right extremity" (upper or lower), a slight fever shortly after admission, and in a few days developed *severe pain in her right calf with some increased tension and fever.* There was no evidence of extension of this into the thigh or groin. The temperature gradually rose to 103-104, where it persisted. There is no mention of chills. The patient gradually got worse and became unable to talk or express herself. This appeared to be largely a motor aphasia at first, though there was some mental confusion.

Nov. 14th—The respiratory rate was 40-50 per minute, but there was neither clinical nor röntgenologic evidence of pneumonia. Her "legs" are reported as unchanged, or slightly better. Nothing is said about the dorsalis pedis pulse.

Frequent examinations of the eyegrounds were all negative in their findings.

Accessory Clinical Findings. Nov. 3rd—Urine: sp. gr. 1.030, acid, albumin, 2-plus, sugar 0, sulfa crystals. *Blood*: r.b.c. 4,650,000; hgb. 13.2 gms. (91%); w.b.c. 10,200—neut. 83, stabs 2, lymph: 12, eos. 1, mono. 2. .

Nov. 4th—Spinal fluid: *bloody,* proteins 45 mg.% (the normal range is 16 to 38, slight excess may be due to the blood present. Subsequent punctures failed to reveal blood, so this was considered to be of no significance.) "Gold Chloride" (colloidal gold?) 0000000000

Nov. 6th—"Sugar (presumably blood sugar) 100 mg.%, Kahn negative, calcium 11 mg.% (normal 9-11).

Nov. 7th—Spinal fluid pressure 180 mm. The normal is 110 to 130 mm., recumbent. A pressure of over 150 mm. is high in any position. Neutrophiles 0, lymp. 3, blood cells 0. In other words, the cell count in the fluid is normal.

Nov. 12th—Urine: sp. gr. 1.033, acid, albumin 2-plus, sugar 0, "w.b.c. 20" (I take this to mean to a 1/6 field) Epithelial cells and bacteria plus.

Nov. 14th—Blood: *w.b.c.* 19,700- *neut.* 82, *stabs* 10 (*total of* 92% *granulocytes*), lymph. 8.

Spinal fluid: "Turbidity". The total cell count is given as 10, but the record goes on to give the items "N. 12% and L. 88%". I take this to mean that 12% of the cells were neutrophiles and 88% lymphocytes. If 10 cells were counted, one neutrophile would be 10%, two would be 20%, etc. I am sure the examiner did not find 1.2 neutrophiles. If he had made, say, 5 counts and averaged them up, finding 6 neutrophiles out of a total of 50 cells counted, this would give 12%; but this is not the usual procedure. I wonder if the total cell count of 10 should not read 100. With proteins 87.4 mg.%, if the total count of 10 is correct, the turbidity is presumably due to the high-protein content.

Nov. 17th—The hemoglobin has dropped to 11.5 gm. or 76%.

Nov. 20th—R.b.c. 4,300,000, w.b.c. 11,000—neut. 75, stabs 5, lymph. 16, mono. 4. "Toxic changes 4 plus" (presumably meaning such things as basophilic stippling in the granulocytes, Türck irritation forms among the lymphocytes, etc.) Sulfathiazole ft. tr.

Nov. 22nd—Blood culture negative.

X-ray Report. This is undated, but is described as "in the beginning", and states that there was ballooning of the sella with thinning of the dorsum and blunting of the anterior clinoids suggestive of secondary pressure.

Later röntgenologic studies of the lungs were entirely negative.

ANALYSIS

What was the "explosion-like sensation in the right ear" due to? There is no statement as to discharge from the ear—a point of the utmost importance in distinguishing between tumor and abscess. It can hardly be considered parakusia with facial paralysis, for it preceded the paralysis by months, and of tinnitus, so usual with parakusia, there is no mention. There is no story of falling or vertigo to suggest a Ménière's syndrome. The record suggests an intracranial lesion, and it seems likely that it was a Jacksonian manifestation, affecting the ear, possibly by spasm of the stapedius muscle; also the neck and shoulder of the same side.

There was development of spastic paralysis, beginning in the fingers of the right hand and involving the whole of the right upper extremity and right face rather rapidly, and the right lower extremity finally, associated with Jacksonian fits. This is not a pure motor picture, for there was hypalgesia of the "right extremity," whatever that means, and astereognosis in the right hand. Towards the last, motor aphasia and confusion, occurred. *No ocular evidences of increased intracranial pressure were found at any time.* The pulse is described as soft; but nothing is said of the rate, a rather important point in the study of intracranial lesions. Severe or projectile vomiting we may assume to have been absent, as there is no note of it. Considerable fever was present, especially towards the end. This and the absence of papilledema might favor the diagnosis of abscess rather than tumor, but the fever may be explained on other grounds. The fever came after the leg episode. The reported increased tension of the leg suggests a thrombophlebitis rather than an arterial occlusion, though no mention is made of edema. Just putting a patient to bed seems to bring on a thrombophlebitis at times. The rapid course seems rather against a primary brain tumor and in favor of either abscess or a metastatic growth.

Now, as to the Jacksonian attacks. A *"right* Jacksonian attack affecting the *upper extremities"* is hard to explain. Assuming such an attack starting in the right upper extremity, if it affected the left also, one would expect this to be via the right leg and left leg, finally reaching the left arm. The fit's starting point would be in the center for the right arm in the middle portion of the left precentral gyrus (Jacksonian fits are cortical in origin), and then spread to involve the upper portion, controlling the right lower extremity, then cross over the superior longitudinal fissure to affect the upper part of the right precentral gyrus controlling the left lower extremity, and then down this gyrus to its midportion, thus finally affecting the left upper extremity.

Now as to the small tender movable mass in the left breast. We are entirely too prone to think that movability in such a tumor means benignancy. A fixed tumor in the breast *is* almost certainly malignant; but a movable tumor *is not* almost certainly benign. The very rapid course of the brain lesion favors a metastatic growth rather than a primary one. Also, the absence of choked disc favors an infiltrative type of growth, if abscess can be excluded. Thrombophlebitis in a leg cannot be a source for a septic embolus in the brain unless there is a deficient interauricular

or interventricular septum, for without this the embolus would lodge in a lung. We have no evidence at all of such a septal defect; besides, the brain symptoms began long before the pain in the leg.

The sellar changes noted are unusual in a cortical lesion. There is nothing whatever in the clinical picture to suggest a pituitary tumor. So-called suprasellar tumors are usually tumors not as far away as the cortex. It is conceivable that an infiltrative lesion could get near enough to produce the sellar changes. It is possible that there could be no additional metastatic tumor in or near the hypopysis without hypophyseal clinical symptoms, but this seems to me highly improbable. The low cell count in the spinal fluid is against abscess, and, even if the count were 100 in the one obscure report, the great predominance of lymphocytes would still seem to me against it. No focus of infection is described from which a brain abscess could arise. However, I have seen one cerebral abscess demonstrated at necropsy that gave no history whatever of otitis media or other source for it. While this cannot be absolutely excluded, I shall make the diagnosis of a *primary malignant tumor of the left breast, with metastasis to the midportion of the left precentral gyrus, the metastatic growth infiltrating both up and down the gyrus, thus affecting the right upper extremity, the right lower extremity and face; also infiltrating backwards to affect the left postcentral gyrus to cause the "hypalgesia of the right extremity* (whether upper or lower extremity would determine the part of the gyrus affected), *and infiltrating forwards and deeply to affect Broca's area, producing the motor aphasia, and downwards to cause the sellar changes,* unless a separate and more recent metastatic tumor should also be present in or near the hypophysis, without producing clinical symptoms.

Of course, in such a case, metastatic growths too small to produce symptoms might be found elsewhere in the body. The 20 pus cells reported in the final urinalysis suggest also a mild terminal urinary-tract infection—an unusual occurrence during the administration of sulfathiazole. There does not seem to be evidence of enough sulfathiazole in the blood to explain the toxic forms of blood cells and the final mild anemia, which are readily explained by the presence of a malignant tumor.

(*See Table of Contents for Pathologist's Report on this Case.*)

RECTAL EXAMINATIONS MAY DISCLOSE DISEASE OTHER THAN RECTAL

(R. H. Walker & T. P. Mantz, Charleston, in *W. Va. Med. Jl.*, Feb.)

The Sims position permits more relaxation of the patient and enables one to reach higher. A lubricant should be applied to the finger, in many cases an anesthetic ointment.

A relaxed external sphincter is often an early sign of a lesion of the posterior and lateral columns of the spinal cord. Inflammatory lesions may be due to bacillus coli, streptococcus, gonococcus, enterococcus hystolytica, *B. dysenteriae.* Syphilis and benign or malignant neoplasms may be found.

One can often detect a pelvic appendix which gives no abdominal tenderness or pain. Pneumonia and pleuritis may give rise to tenderness and rigidity of the abdominal musculature, but the pelvic peritoneum will not be tender. Acute cholecystitis, pancreatitis, hepatitis can often be ruled out by the absence of pelvic peritoneal tenderness.

Rectal examination includes carcinoma of the prostate gland as well as carcinoma of the rectum; 70% of all intestinal cancers are located in this region. Carcinoma of the rectum within reach of the examining finger in 77.5% of the cases. Most of these patients will give a history of constipation, low backache, pruritis ani, diarrhea, pus, blood, hemorrhoids or fistula.

Never treat hemorrhoids until the patient has had a sigmoidoscope examination.

Rectal polypi and adenomata are precancerous tumors. Carcinoma of the rectum is capable of producing early symptoms but the patient is apt to disregard them or the physician to misinterpret them. The time symptoms are present before diagnosis averages 12 months.

The technic of rectal examination is simple.

Care, consideration and gentleness should be shown.

The information obtained is of great value for early diagnosis.

Rectal examination should be included in every physical examination.

THE PRESENT STATUS OF OPERATIVE TREATMENT FOR HYDROCEPHALUS

(A. D'Errico, Dallas, in *Sou. Med. Jl.*, Mar.)

Many cases of hydrocephalus are not at all amenable to surgical treatment; in some only palliative relief can be given, but operation prevents the disability which occurs with prolonged increase of pressure. Only a few cases can be cured. Appreciable hydrocephalus may be present long before abnormal enlargement of the head is apparent. Early study and recognition are essential and as soon as a progressive dilatation is established operation should be done at once. Surgery in cases of extreme hydrocephalus or disability preventing a useful existence is not justified.

SUBLUXATION OF THE HEAD OF THE RADIUS

(S. A. Anderson, Jr., Richmond, in *Sou. Med. Jl*, Mar.)

This condition has an incidence of 1% of surgical cases in children under 9 years of age; the large majority under 3 years of age. The cause is sudden traction of the extended arm. The symptoms and signs are: loss of use; absence of deformity; tenderness over the head of the radius; limitation of complete flexion and extension by pain, and especially limitation of complete supination by obstruction and exquisite pain. Reduction is by forced supination with the forearm flexed at 90° or more. At the moment of reduction there is felt a click at the elbow, and thereafter all movements are free and painless.

DEPARTMENTS

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

MAN AND WAR

I THINK man loves warfare. I believe warfare may exhibit man's most natural behaviour. Fighting is in man instinctive. If he cannot fight in battle, he will fight vicariously. He will do battle through a surrogate. Man loves the prize fight. He thinks the victor always symbolizes himself. The bleeding and broken nose, the bruised and blued lips and ears pleasantly appeal to his eyes; and the thud, thud of fist on head, trunk and neck are sweet music to his ears. Man is constantly transforming and elaborating and storing energy. Man is an energy-system. I do not know what energy is, but I think it is that which does work. I think energy cannot be created; it is already in existence in many forms, and it is rather easily transformed from one state into another. Energy, unlike many people, resents inactivity and idleness. It would be always busy—on week-ends, Sundays, holidays, all day, all night, in good weather and in bad. Energy, not unlike steam, apparently dislikes to be confined. It is constantly seeking release. A human being is a mere reservoir of energy.

I often think that the individual who can provide a sufficient number of congenial and wholesome outlets for his energy is fortunate. Such an individual is likely to be both adequate and happy. But the person whose energy does not find such release is almost certain to be unhappy and unsuccessful.

Man's energy may be managed by his intellect, by his emotions, by his instincts. Conduct motivated by instinct is, biologically, most natural, most easy, and racially the wisest. Behaviour manifesting deep emotion is likely to be most violent and difficult to control. Fear and grief afford illustrations. Intellectual conduct is the most difficult and the most unnatural. It represents man's most recently evolved conduct, and he exhibits as little skill and ease in its performance as an infant in walking. But probably no behaviour is wholly intellectual or entirely emotional or altogether instinctive.

The primitive instincts cause man to yearn and to hunger. There are few fundamental hungers. Man hungers for food and drink; he yearns for protection against heat and cold; he hungers sexually; he probably yearns for companionship—if for many companions, he is said to be gregarious. And man instinctively yearns to be superior, to excel, to be pedestalized, to be looked up to. That may include the yearning to be victor, to conquer; perhaps to kill. But killing may be only the final step in establishing superiority over another. Yet I am inclined to believe that man is instinctively a killer; that he kills because it excites him pleasantly.

An instinct asks only for gratification. The hungry person eats to relieve discomfort and not to nourish the body. Sexual gratification is pleasant; it makes appeal for that reason and not because it makes possible offspring. Fighting is instinctive, I think so, and man yields to fighting, not fundamentally to achieve a purpose, but to satisfy a hunger. Instincts ungratified tend to leave the individual tense, nervous, unstable, unhappy. Gratification of instinctive hunger affords relief. Yielding to instinctive urges may be wise or foolish, helpful or hurtful; but it is always biologically natural and, therefore, satisfying. Although man is probably more generously endowed with instincts than any other animal, yet man knows that instinctive conduct is under ban, most of it, and he is driven to the necessity of keeping his instinctive urges stoutly repressed or he tells stories about them.

By going backward in behaviour a few thousand years man may behave instinctively and naturally and in deeply, profoundly satisfactory fashion. That stepping back into our ancestral animal past is called retrogression. Sometimes we go away back there to escape affectation and hypocrisy—to rest and obtain relief. Nothing is more fatiguing and disgusting and unsatisfying than affected behaviour, even though it may bring success and social esteem. Man would prefer to be honest merely because it is easier. But man may regress not only to escape from something, but also to obtain some object or to create an opportunity. Sometimes man becomes intoxicated in order to regress out of a civilized world into an animal world— or go fishing or hunting, or to New York or down to Miami, alone or accompanied. Or man may regress into that state in which his ancestors fought naturally and terribly but joyously. The soldier may regress for that purpose unconsciously without knowing it in words. We generally do the thing more easily and better if we do not understand, intellectually, just why we do it. Giving a good name to a sorry dog is spoken of in psychology as rationalizing. Gratifying the instinctive urge to kill in civil life constitutes a capital crime; doing the same thing in warfare represents patriotic behaviour. The dead murderer gets a pauper's grave; the military killer gets a monument. Fight-

ing and killing in battle are easy, joyous, indeed, if they represent regressive conduct. And such killing becomes supremely satisfying if it wins high approval—congressional medal, iron cross, purple heart, what not? The purpose of having recruits is, I assume, to lead them or to drive them back regressively for a few thousands of years, so that they may become as cruel and as blood-thirsty as their ancestors once were. Then they will do their killing splendidly and fearlessly and joyously. And their governments and their sweethearts will proclaim them lovely heroes.

Man is the most predatory, the most wanton, the most destructive, the most cruel of all animals. He kills for the joy of killing, and he exults in it.

I am not speaking of your brave ancestor nor of mine, nor of you, nor of me; but of all of us mortals—of the primitive instinctive urges that saturate all of us and that cry out constantly for satisfaction. What strange admixtures we are! How base and terrible! How grand and glorious! In going to the front, in the deadly fighting where men and animals were being blown to pieces, General Lee dismounted Traveller, and gently placed the little birds back in the nest from which they had fallen. Just before the opening of the Chancellorsville campaign Stonewall Jackson was told that the little golden-haired Corbin child, who had been his pet during the winter months, was dead of diphtheria. He wept inconsolably. But amidst his tears he signed the warrant that sent some of his own soldiers before the firing squad for desertion.

Warfare affords man the opportunity to ennoble himself by the display of god-like qualities; and to satiate himself by lustful, hand-to-hand, regressive slaughter. No other activity, save war, makes such equal demands upon all that is base and all that is grand and heroic and unselfish in man. For all they do, low and high, we crown them in life and memorialize them when dead. While men are men and women are women, man will fight his fellowman. Warfare releases his instincts, liberates his highest emotions, and gives him companionship amongst the world's mightest immortals.

DENTISTRY

J. H. Guion, D.D.S., *Editor*, Charlotte, N. C.

VITAMIN D AND DENTAL CARIES

A recent [1] research has centered on discovering the relationship of Vitamin D to dental caries.

There is a great deal of evidence that there is a seasonal variation in the incidence of caries, less caries being initiated in summer. Exposure to the sun in summer and to artificial ultraviolet radiation in winter apparently reduces the incidence of caries.. Resistance to dental caries is increased by feeding children Vitamin D by mouth.

The report abstracted is a summarization of data on the prevalence of caries in over 500,000 children in cities of more than 10,000 population throughout the United States.

In previous studies of rural children, the author, working with Kaiser, found that the more sunshine and the milder the winter the lower were the caries rates in the groups of children, the farther north the higher the caries rates.

It seems to the author that there is a direct relationship between the results obtained in Vitamin D feeding, of seasonal influence on the incidence of caries, of the effects on caries incidence of ultraviolet radiation of the skin and the results obtained in their investigation.

In the present report consideration was given to three environmental factors—the number of hours of sunlight per year, the winter temperature, the latitude.

Under identical conditions of temperature, sunshine and latitude, the caries rates for city children were higher than for rural children of corresponding age and sex. This is apparently due largely to the cutting off of certain elements of solar energy by smoke, tall buildings, narrow streets and so on.

Strong evidence is presented that the amount of solar ultraviolet energy available at a given point of the earth's surface is related to the amount of dental decay in the teeth of children residing at that location.

This study appears to substantiate reports that the caries incidence in children is lowered when they are fed Vitamin D at regular intervals, and indicates that even in the southern cities included in this study children do not obtain from the sun or from their food sufficient Vitamin D for optimum resistance to caries.

These results support the recommendation by the Health Organization of the League of Nations that public health authorities should give close attention to the possibility of decreasing the incidence of dental caries by the administration of Vitamin D to children.

The subject of tooth decay is a baffling study. The foregoing report is worthy of careful consideration as a temperate recommendation after an elaborate investigation.

1. East, B. R.: Relation of Dental Caries in City Children to Sex, Age and Environment. *Am. J. Dis. Child.*, 61:494-517, March, 1941.

DERMATOLOGY

For this issue PAUL GERHARD REQUE, M.D., Durham, N. C.
Associate Dermatologist, Duke Hospital

PITYRIASIS ROSEA

WITH THE ADVENT of spring, this interesting disease assumes more importance for the practitioner as it has definite trends toward an increasing number of cases each spring and fall. It is quite common and relatively easy to recognize, especially in the classical form, but it is surprising how many patients go undiagnosed for weeks, only to have the disease spontaneously disappear. If the patient has just used a patent ointment prior to the "cure" the credit usually goes to it, and it is well known that pityriasis rosea resolves spontaneously in from 6-10 weeks in nearly every case.

The diagnosis is made by the discovery of a widespread eruption, of a slightly pink or salmon color, which is limited to the trunk, neck and proximal portions of the extremities; it is very unusual to see lesions on the face, hands or feet. The individual lesion is oval with its long axis in the normal lines of cleavage of the skin. The border of the single lesion is slightly vesicular, the center tends to clear before the periphery leaving a crinkled skin, or a cigarette paper appearance. In about a fourth of the cases the patient can point out the initial lesion, the herald patch, larger than any of the others. Itching is moderate to severe in 50 per cent of the cases; the others are seen because of the worry occasioned by such an acute and widespread eruption. Usually at the onset slight malaise is experienced, often with slight elevation of temperature, but no disturbing illness is the rule. If untreated, the course is 6-10 weeks at which time it involutes, and it is of interest that few patients ever have a recurrence. Rarely, a papular form is seen with the same distribution of the lesions but this is generally a diagnosis made by exclusion.

The major skin diseases requiring differentiation are secondary syphilis, and drug eruptions. The history will be of greatest aid here. It goes without saying that every skin disease diagnosed as pityriasis rosea must have serological tests done to rule out syphilis. The occurrence of plantar and palmar lesions will exclude pityriasis rosea in most instances of secondary syphilis.

The etiology of the disease is unknown. It does not appear to be contagious, yet the fever, as well as the time of year, would seem to indicate a bacterial or virus etiological agent. Inoculation of ground skin lesions has never produced evidence that the disease is bacterial after injection into other human skins. One experimenter reports successful growth of a virus on allantoic membrane of the egg and states he was successful in reproducing the disease on his own skin.

The treatment is directed largely toward relieving pruritus and nothing more. It is of utmost importance *not* to use strong ointments or lotions as these will only add to the misery of the patient. Bicarbonate of soda baths are contraindicated as they are frequently irritating.

If the patient is seen early in the course of the disease ultraviolet light in doses sufficient to produce a marked erythema (not blistering) is the best method known to cause rapid involution and cessation of pruritus. It is less effective after the first week or two of the disease, but peeling the skin with ultraviolet light is still useful. In addition, simple antipruritic lotions such as calamine with 1% phenol and ½% menthol are helpful and starch, oatmeal, or bran baths will permit a comfortable night's sleep as a rule. In severe pruritus some form of sedation may be needed. In all cases large doses of reassurance are required to allay the patient's fear of contagion.

THERAPEUTICS

J. F. NASH, M. D., *Editor*, Saint Pauls, N. C.

INJURIES TO THE KNEE JOINT

KNEE-JOINTS are frequently injured, and not uncommonly fail ever thereafter to perform as well as before. Here's a good refresher[1] on the subject.

The synovia may produce an enormous effusion from a minor contusion; none at all may follow a serious cartilaginous tear. A knee in which a .32 bullet was lodged showed no swelling nor any sign save for the bullet hole. Except in trivial injury a radiogram should be made possible.

The bulk of knee injuries consist of ligamentous strains, without gross tearing. The knee is most subject to *inward* stresses, strain on the internal lateral ligament, usually at an instant when the muscles are not prepared. Twisting added, with the foot held fixed, may strain the anterior cruciate ligament. Much less frequently, the posterior cruciate then the xtrnal lateral ligaments are strained. Except with gross tearing, when obvious disalignment gives the clue, the swelling and other acute local reactions will for the most part mask the extent of ligamentous injury. One cannot make a complete appraisal of the damage until this has subsided.

Such an injured knee should be put completely at rest until a fracture can be ruled out, and many

1. Edward Parnell, Minot, N. Dak., in *JhLancet*, March

are the times when clinical diagnosis has been overruled by the röntgenologist. Use a spint, with upright foot piece, with a bend to keep the joint in 20° flexion. An ice bag is useful. As the acute symptoms subside allow walking with crutches, the knee protected by heavy strapping applied around above and below, over a light padding.

A cast should never be used, since rigid immoblization at this state results in stiffening. After a time crutches may be discarded, and weight-bearing with the strapping alone permitted; later all restraints are removed. Institute quadriceps exercises, teaching the patient to pull up on his patella slowly and tightly, and letting it go. Begin with a half-dozen times daily, and increase to 50. Even gross tears will respond and seldom need surgical repair. A complete or partial *tear of the quadriceps tendon* always requires repair of the most careful sort.

Often the patient comes with a history of old injury and chronic ache and pain in the knee. A torn cartilage can be ruled out by the absence of a story of locking, and a fracture by x-ray. Examine the integrity of the ligaments by forcing the knee medially and literally, and the tibia forward and backward. Gross hypermobility in any direction usually indicates a gross tear that calls for one of a number of ingenious operations. Usually there will be at the most only a slight give on medial forcing with localized tenderness at the medial aspect of the joint. The quadriceps muscle will usually show some atrophy and loss of tone, this felt and seen rather than demonstrated by girth measurement of the thigh. Usual diagnosis is sprain of the internal lateral ligament. Elastic supports further weaken the joint and cause increased muscle wasting; heat and massage are helpful. Take some of the strain off the injured region by providing the shoe with a Thomas heel, or raise the inner border of the heel with a wedge lift of ¼ inch. Most important, are quadriceps exercises, faithfully carried out. The patient will usually note improvement in 10 days to two weeks, and from then on will be enthusiastic. He must be told that he will have to do the exercises every so often for several years, since a relaxed ligament or joint capsule is apt to recur unless special attention is paid to it. Many persons, particularly flabby women, will have to be taught this exercise in painstaking fashion. Begin by telling them to sit with foot on a chair, and raise the whole leg with the knee extended. Once they catch on, they can easily do this exercise while standing.

Intra-articular fractures frequently complicate knee injuries. Except for flake and avulsion fractures in the region of the femoral condyles, the tibia is nearly always the bone affected by reason of its vulnerable corners and spines. Proper diagnosis cannot be made except by x-ray. Treatment of most of these fractures consists in partial immobilization in posterior splints or split casts. In corner separations, traction is usually of advantage. Prolonged immobilization should not be used. No weight-bearing for six to eight weeks should be the rule. Table depressions, unless very mild, call for open reduction.

Tearing of the semilunar cartilage is apt to cause no other evidence than pain and locking of the joint. In severe injury these signs mask the internal derangement which later symptoms bring to light. The treatment is always surgical removal.

Osteochondritis dissecans may result from a single severe trauma or from repeated minor traumata. Injury to the articular cartilage alone is more difficult of healing than injury to both cartilage and underlying bone. Following recovery from the acute injury, the patient may complain of vague chronic pains, and of a tendency of the knee to give way. A subchondral bone necrosis may occur, separation of a button of cartilage until the latter lies loose in a crater. An x-ray examination will show a line of destruction along subchondral bone, usually on the internal condyle. At operation the joint surface usually is smooth and normal, but on incision out pops the offending button. Lightly curetting the underlying bone, in effect completing the injury into the bone, makes healing possible.

SURGERY

Geo. H. Bunch, M. D., *Editor,* Columbia, S. C.

THE SURGICAL CURE OF PEPTIC ULCER

The high percentage of recurrences after operation for peptic ulcer emphasizes the fact that, over the years, surgical treatment has not meant surgical cure. According to Pope, man can reason only from what he knows. A study of what we know about ulcer shows that the ultimate success or failure of any type of operation for ulcer depends upon its conformity to basic principles of underling gastric physiology. Although perfection of operative technic has lowered primary mortality it has not materially lessened ulcer recurrence, nor improved morbidity. In our day no gastrointestinal anastomosis should obstruct and no suture line should leak.

Gastric hyperacidity is so common a finding in cases of peptic ulcer that treatment, medical and

surgical, has been based almost exclusively on efforts to lessen or to neutralize this acidity. As pioneers in the surgical treatment of ulcer the Myos popularized the no-loop, posterior enterostomy to overcome acidity by admitting alkaline bile from the jejunum through the stoma into the stomach. After a generation surgeons and clinicians are agreed that, except for a very limited number of cases, gastroenterostomy not only fails to cure the ulcer but is often followed by a marginal ulcer, the surgeon's own child, which is more disabling and more resistant to treatment than was the primary lesion. Gastroenterostomy is now the operation of choice only in cases of chronic obstruction and low acidity. It should be done otherwise only when more efficacious operative procedures cannot be satisfactorily accomplished because of the poor condition of the patient.

After the era of gastroenterostomy came that of pyloroplastry, strongly advocated by Finney, Horsley and many others. By cutting the sphincter and enlarging the pylorus they likewise have utilized the bile in overcoming gastric acidity. Results after pyroplasty have been decidedly better than after gastroenterostomy, not only because the incision permits the excision of pyloric lesions but because the normal relationship of duodenum and stomach is maintained. Ulcer recurrence is less, as reception of acid stomach contents is the normal for the duodenal mucosa.

Because after gastroenterostomy, and to a less degree after pyloroplasty, so many patients have persistent or recurrent disability, we are now apparently entering upon a third phase of the surgical treatment of peptic ulcer. This is based upon the logic of preventing the secretion of acid by excision of the acidforming portion of the stomach rather than in attempts at neutralizing the acid in the stomach after secretion. Sufficient reduction in secretion of acid is assured only by resection of the distal three-fourths of the stomach. The end of the duodenum is closed and the proximal end of the stomach anastomosed into the side of the jejunum. To lessen the danger of postoperative obstruction and to facilitate the performance of secondary operation which may become necessary, the anastomosis should be antecolic.

American surgeons have heretofore considered partial gastrectomy as being unnecessarily drastic and mutilating for the treatment of peptic ulcer. Now, however, they accept the hazard of a somewhat higher primary operative mortality rate to insure freedom from recurrence by preventing gastric acidity which, no matter what the unknown underlying cause may be, is the activating agent in peptic ulcer. Partial gastrectomy, as advocated by Finnesterer, has long been practiced in leading European clinics.

HISTORIC MEDICINE

THE POLISH MEDICAL FACULTY WITHIN THE UNIVERSITY OF EDINBURGH

Prof. A. T. Jurasz, Dean of the Polish Medical Faculty, in *Proc. Royal Soc. Med.*, Dec.

Abstract: Since our military collapse Hitler has announced through General Governor Franck that: "The Polish slave people have no need for education, the elementary school is more than enough. There will never again be a higher institution of learning in Poland, instead there shall be an intellectual desert."

Closing all universities and higher schools of every kind; learned societies have been banned; Polish periodicals and books have been forbidden.

To insure that Polish science should not rise again, the greater part of the universities' teaching staffs have been arrested. The example of Cracow has shown us 180 distinguished men of science and professors deported to a concentration camp in November 1939. Many died as a result of privation, and their deaths have been announced to their families simply by sending them their ashes. The professors of Poznan University have met a similar fate, and during the last few weeks we have heard of the same crime being perpetrated in the cases of the professors of Lwow and Warsaw.

The Germans have found many pretexts for killing prominent members of the Polish scientific world—one of which is, that the community is responsible for the action of the individual member. They shoot eminent scientists, although they are completely innocent.

All libraries have been closed, the contents of many have been confiscated, while others have been reopened as German institutions in order to serve the cause of the Germanization of Poland. Everything of special value has been taken from the museums, galleries and collections and sent to Germany. Cathedral and church treasures have not escaped. In this criminal plunder of our cultural institutions German professors of distinction, who were formerly our guests at Scientific Congresses, have taken a very active part. In some cases these men had with them copies of the receipted bills given to them by the German firms from whom the equipment had been purchased originally. Names of Dr. Augsburg, Professor Muhlmann, Professor Pullheimer, Dr. Richter will never be forgotten in this connection! This systematic and well-prepared

looting, after hostilities had ceased, has brought no smaller losses on the Polish nation than all the aerial and artillery bombardments of Warsaw.

Another sign of the German hatred of Polish culture is the requisitioning by the invaders of all buildings connected with education. The Ministry of Public Instruction is occupied by the Gestapo; Warsaw University now houses the Security Police; the secondary schools are occupied by the Army; and the Jewish Students' Hostel in Cracow has been transformed into a brothel.

People reared under Western rule cannot comprehend the endless atrocities which are being committed with such delight in the endeavor to exterminate Polish culture.

In June, 1940 the Polish Army was brought over from France to the British Isles. Colonel Irvine Fortescue, D.D.M.S., Scottish Command, finding considerable numbers of Polish doctors and among them members of Polish Medical Faculties, in the army, suggested to the Polish military authorities that batches of 20 Polish medical officers be attached to the Military Hospital, Edinburgh, for periods of a fortnight and further arrangements made with the Medical Faculty of the University and with the Managing Board of the Royal Infirmary, whereby they might be spread among the different university medical departments and infirmary clinics.

This suggestion was eagerly accepted by the Polish military authorities, and batch after batch of officers came to renew their interest in professional activities. But it was soon recognized that the linguistic difficulties were robbing these good intentions of much of their value. As among the Polish medical officers then in Scotland were many who had held academic positions in Polish Universities and among the troops were many students of medicine whose studies had been interrupted by the war, the further suggestion was made that these Polish professors be allowed to come to Edinburgh and teach their own people in their own language, and that the medical undergraduates should be allowed to come and finish their curriculum and proceed to graduation.

The Dean of the Medical Faculty placed before his Faculty the suggestion that we should form a medical school of our own. The University issued an official invitation to the Polish Prime Minister, which was readily accepted. The secretary of the University and the legal adviser to the Polish Government worked out the constitution of the new school.

The solemn inauguration of the Polish Medical Faculty took place on March 22d, 1941.

As a complement of the Faculty we have organized a Polish hospital of our own called the Paderewski Hospital, in a separate building. We were able to equip this hospital through help from America through the "Refugees of England" Anglo-American Committee and the Paderewski Testimonial Fund. A new medical library of our own has been started and already contains 340 volumes.

Just a few days ago the first academical year ended and the second started with hardly a break. Last year the number of students was 77; amongst them were 47 serving in the army who received leave for the purpose of their studies; and 30 civilians. Some 30 had finished all their studies in Poland but had not passed their examinations. It was arranged that they should go through a refresher course. The first student to receive his diploma from the hands of the Dean of the Polish Medical Faculty in Edinburgh was a pilot in the Air Force who, despite his medical profession, returned to his fighter squadron after receiving his degree.

For the second academic year we have 120 students on our Roll, of whom five are Czechs.

The University of Edinburgh has not only given us hospitality, it has given us its heart. In Edinburgh is the only Polish academical school at the present moment in the whole world. The old University of Edinburgh was not unknown to Poles; among the Scottish emigrants who, centuries ago, came to live in Poland there was one who founded a scholarship for Protestant ministers in Poland to study at the University of Edinburgh. Polish students made their appearance here in the 17th and 18th centuries. As the seat of Common Sense Philosophy this University attracted the attention of John Sniadecki, mathematician and astronomer, the rector of Cracow University at the end of the 18th century. Dugald Stewart was Sniadecki's master in the school of though which he propagated in Poland. Sniadecki sent his younger brother Andrew here, who studied under Andrew Duncan, Alexander Monroe and James Gregory, and on his return to Poland organized a Department of Modern Medical Science at the University of Wilno, basing it on his experience gained in Edinburgh. This Department served as a model for the reform of the medical faculty at the University of Cracow. It was also from Edinburgh that Andrew Sniadecki brought home the inspiration to prepare the first Polish fundamental manual of organic chemistry.

The University of Edinburgh became the centre of attraction for the Poles after the year 1820. One of them, Konstanty Zamoyski, offered the Univer-

sity a set of books giving information about Poland, her history, art and culture, which has been preserved until today in the Advocates' Library. Owing to the encouragement of Professor John Wilson, the protector of those Poles and the most popular figure at the University of that day, one Polish student, Krystyn Lach-Szyrma, published in Edinburgh Literary and Political Letters on Poland (1823). The same author on his return to Poland, where he became a professor in the University of Warsaw, published a work in three volumes entitled "England and Scotland—Reminiscences from My Journal," in which he gave a striking picture of Scotland of those days, of her life, her economic and cultural peculiarities, her national character and customs, of Sir Walter Scott, and a number of the professors of Edinburgh University.

Such are some of the old cultural likes between Scotland and Poland.

Several weeks ago there was a meeting in London of Scientists from allied countries. A *Magna Carta Scientiae* has been published which has set out the reasons for which we are fighting in this, the most terrible war the world has ever known. The resolution passed at this meeting states that liberty of thought is the principal condition of human evolution. Liberty of Learning and of Teaching are indispensable for the evolution of science and digression from this principle would be degrading to human ideals.

The story of the creation of the Polish Medical Faculty surely deserves to find a place not only in the history of Medicine, but in the history of world culture, as on eof the fulfilled postulates of this *Magna Carta Scientiae*. The Polish Medical Faculty in Edinburgh is an effective post in the front line of our battle against the destructive power of barbarism which seeks to set up its perverted "culture" on the ruins of Europe.

GENERAL PRACTICE

James L. Hamner, M.D., *Editor,* Mannboro, Va.

TREATMENT OF BURNS

Have any of us been satisfied with any of the methods of treating the burned patient. Great improvements over carron oil that they are, none of them is entirely satisfactory.

Here is abstracted an article[1] that sounds promising.

A patient with a burn enters the accident room, he is placed on sterile sheets. Cultures are taken from burned areas. While surgeon is scrubbing, the nurse sprays the burned area with 3% sulfadiazine in 8% triethanolamine, usually with an atomizer. This procedure allays pain to such a degree an analgesic may not be necessary. The burned areas are not washed; aseptic technic is carried out in the debridement of the blebs and loose tissue.

The patient's bed is brought to the accident room, transfer to and from a stretcher thus being avoided. The bed linen is sterile. A heat cradle with blue bulbs to prevent glare is used to keep the t. at 90°.

The burned areas are sprayed q. 1 hr. the first day, q. 2 hrs. the 2nd day, q. 3 hrs. the third day, q. 4 hrs. the 4th day. By this time a thin, translucent eschar has formed, and further spraying is not essential. Through the eschar the progress of the healing can be followed, exercise and weight-bearing are encouraged to prevent contractures.

After 10 days the edges of the eschar begin to loosen, compresses of the sulfadiazine-triethanolamine mixture applied; in many instances sterile mineral oil sprays followed by normal saline compresses allow the eschar to be removed in large sheets. In third-degree burns the eschar is allowed to remain in situ for at least 2 weeks.

Patients having burns of second degree severity and involving not more than 20% of the body surface are not hospitalized, debridement is carried out by the same technic, observed 2 hrs., during which time the burned areas are frequently sprayed with the solution. The burned areas are covered with sterile vaseline gauze or an ointment consisting of 5% sulfadiazine and 8% triethanolamine in a stearin base. These patients return in 24 to 48 hours. Cultures are taken from the burned areas, after which they are again sprayed several times and then dressed with either the ointment or the vaseline gauze, to be repeated on return visits until the burned areas are healed.

Sulfadiazine solution may be used in and around eyes with impunity. It is detectable in the blood several hours after the spraying. Sulfadiazine blood levels are determined daily for several days in patients receiving multiple daily treatments.

The results obtained in 115 cases: Burned areas have healed more rapidly than any form of treatment previously used at the Johns Hopkins Hospital. No infection has occurred in any of the outpatient cases and only 2 of the 15 hospital cases gave any evidence of infection. Only 1 of the 115 showed any toxic effects.

1. K. L. Pickrell, Baltimore, in *Bul. Johns Hopkins Hosp.*, Aug.

OUABAIN IN CONGESTIVE HEART FAILURE

(A. L. Smith, Lincoln, Neb., in *Med Times,* Feb.)

I never give ouabain to any patient who has had digitalis within the 10 preceding days. In 303 cases I have followed the method of Clerc injecting intravenously 0.25 mgm. two to six times at intervals of 12 hours (not over 1.5 mgm.) or until compensation was resorted and then this was fol-

lowed by adequate doses of folia digitalis instead of digitaline. If an emergency existed, 0.5 mgm. was given, this followed by 0.1 mgm. if necessary. When much edema was present, salyrgan was given intravenously ½ hr. after the first dose of ouabain and this greatly assisted in diuresis.

The majority (273) were treated in my office and only those with serious myocardial degeneration were kept in bed.

Each patient was carefully examined and a diagnosis of congestive heart failure was made, each having tachycardia (110-161 per minute) and two or more of the other symptoms—dyspnea, orthopnea, edema, enlarged liver and lung congestion. No patient had received digitalis for at least 10 days, although all but one had taken digitalis before this period. Each received five cat units (0.5 mgm.) of ouabain, in 10 c.c. of 10% dextrose solution, intravenously and shortly afterward four cat units of folia digitalis, orally. The maintenance dose of folia digitalis, usually one cat unit, was started during the second 24 hours. Each patient was seen daily until his digitalis maintenance dose was established and then he was examined twice a week. Some received one cat unit of ouabain each day or each second day.

As soon as dypsnea disappeared, each patient was given increasing exercise, not enough to produce dyspnea.

If the heart rate is not decreased below 100 during the first hour after the intravenous administration of five cat units of ouabain, congestive heart failure is usually not the principal etiological factor.

Forty-six patients with congestive heart failure were given ouabain and digitalis according to a modified Batterman method and the heart rate was reduced to below 100 in each case, except two, within one hour after intravenous injection of five cat units of ouabain.

Nine hundred and sixty-three intravenous injections of ouabain have been given by the author in a period of 13 years and no untoward effect.

Rapidity of action without cumulative effect is the principal value of ouabain, while durability of action with a slow onset is the most valuable asset of digitalis. Giving the two drugs together is the ideal method of treatment in congestive heart failure.

TUBERCULOSIS

J. Donnelly, M. D., *Editor*, Charlotte, N. C.

THE TUBERCULIN SKIN-TEST

For a good many years the value of the tuberculin skin-test has been widely stressed. It has not been contended that the positive reactor must be suffering from active tuberculosis, but that at some time tubercle bacilli have entered the body and have produced a protein allergic response to the toxins. X-raying of the lungs of such positive reactors have been required to learn whether or not the infection has caused change in the lung tissue.

Doubts have arisen among workers in this field as to the positive skin-test being an absolute indication of previous primary tuberculous infection. These doubts were stimulated by the results of studies such as those by the U. S. Public Health Service and the Department of Health of Tennessee in some of the rural districts of that state. These studies showed a considerable amount of what appeared to be healed primary tuberculous lesions (as depicted by the X-ray films) in persons not reacting to the tuberculin skin-test. However, apparently in controversion of the opinion deduced from these results, an addition survey at Hagerstown, Maryland, indicated that the tuberculin skin-test is highly reliable as a case-finder. In this survey of 1000 individuals, 13 cases of tuberculosis were found by tuberculin test and X-rays. All except one of the cases positive by X-ray examination also had positive skin-tests, and this one exception was one of fibrosed and calcified apical disease, of no great extent, which had apparently been arrested for many years.

Two years ago there appeared in the *American Review of Tuberculosis* an article by Esmond R. Long of the Henry Phipps Institute, which article introduced statistics to support the tuberculin skin-test as "accurate in 90 to 95 per cent of cases in selecting subjects for X-ray examination," and that " a loss of 5 to 10 per cent is serious but perhaps inevitable."

The author argues for the specificity of the skin-test by stating that an attempt to separate all individuals into the two groups, infected and not infected, is impossible, and that this attempt is probably the cause of most of the present confusion. He says that three other groups must be included: 1) those infected and not yet positive reactors, but to become positive soon thereafter; 2) those infected and previously positive, but now negative; and possibly 3) those who are infected and never develop a positive reaction. He further notes that allergy develops in from 2 to 6 weeks after infection. In every survey, he says, there may be a few cases of recent infection not yet positive to tuberculin, and in some of these lesions detectable by X-ray examination may develop.

The second group, those previously positive but now negative, is called the most important single cause of the confusion as to the specificity of the skin-test. We have overlooked the fact that in the active disease allergy lessens, may disappear. The writer says that, since morbidity rates are steadily lowering, the tuberculous are being more and more isolated, it is to be expected that reinfection will become increasingly less frequent. These reinfections probably repeatedly restored a weekening allergy, and, since there are fewer reinfections, it may be that loss of allergy may be as common as its continuance.

The author's figures from the study of 2,490 positive reactors show that 276 (11%) became negative, either temporarily or for the period

of observation, and that the stronger the original reaction the less frequently it became negative. In 58 per cent of families free of active tuberculosis the reaction became negative in some member of the family; while in families in which there was continuously a member with positive sputum, the allergy disappeared in some member of the family in only 8 per cent. This appears to show that reinfection is responsible for continuance of allergy. In the 276 cases in which the skin-test became negative, no lesions showed in the films of 94 per cent, and there was no evidence of the reinfection type in any member of the group. In 10 cases in which the X-rays showed apparently calcified lesions, the skin-reaction became negative. The author adds that two children with calcified lesions and negative skin-tests became positive on the development of fresh, active tuberculous lesions.

It is the opinion of most authorities on the tuberculosis case-finding, that the use of the tuberculin skin-test is a very valuable adjunct to the work. Since it is impossible, because of the expense and various other factors, to make use of the X-rays in studies of the whole population, the use of the skin-test is of great worth as a screening procedure in case-finding. Numbers of cases can be tested at a very slight expense.

PEDIATRICS

Edwin L. Kendig, Jr., M.D., *Editor*, Richmond, Va.

THE CARE OF THE SICK CHILD

The care of sick children constitutes a large part of most physicians' practice. Rules for the general care of that group are important, but few physicians explain them with care to the mother.

The sick child should have his own room with provision for light without glare.

Air regulation should be governed by temperature of the outer air, wind direction, humidity and the situation of the room. The temperature of the room should be kept at 68° to 70°, and the room should be thoroughly aired several times each day. The patient must be protected from chilling. For this reason the sick child, and particularly the infant, should not be left entirely without covering, even in the summer. A sleeping bag of outing flannel, or of sheeting (for warm weather), offers an excellent covering for the infant.

The sick child is usually not hungry, and a child with much fever will not tolerate a regular diet. A child with a fever of 102° or above should have a diet of milk toast, soup, cereal, fruit juice and ice cream. In the case of the acutely ill small infant, all solid food should be discontinued and the formula diluted to ½ strength. In case of prolonged illness, the diet may be gradually increased until the patient received a diet high in calories.

Medication and other therapy should be grouped with the nourishment and determination of body temperature at 3- or 4-hour intervals. Adequate rest is essential to the welfare of the sick child, and this cannot be achieved if the patient is to be bothered at frequent and irregular intervals.

The sick child should have a stool each morning, whatever the procedure necessary to effect it.

Recreation for the convalescent is important. Every sick child should have an invalid table on which to play with his toys and games. Even the sick child may play quietly on this bedtable with simple, unexciting toys.

OPHTHALMOLOGY

Herbert C. Neblett, M. D., *Editor*, Charlotte, N. C.

Diminished intraocular tension, either unilateral or bilateral, is common in many affections of the eyeball, and is also found in certain systemic disorders. It is an important diagnostic finding often of aid to the internist and surgeon. Every examination of the eye should include the simple procedure of palpating the globes. By repeated applications of this test with the finger tips one becomes fairly adept in eliciting changes in intraocular tension. If in doubt the tonometer is to be resorted to for confirmation.

Whenever the condition is present, in one or both eyes, it is indicative of alteration in the supportive structures of the globe, or a diminution in the volume of its contents. In certain disease conditions of the globe, especially in iridocyclitis, decreasing tension has a bad prognosis.

Decreased tension is usually the result of disease or injury applicable, directly to the structures of the globe in the case of injury, or by changes in its inner coats or contents from disease. To a less degree it is a result of trauma indirectly applied to the skull or bones of the orbit. It is also noted in lesions of the cervical sympathetic, in operations for removal of the cervical ganglia, and in diabetic coma. These latter conditions make the sign of some practical importance to the internist and surgeon, especially in cases of coma.

The main purpose in presenting this subject is to establish the importance of decreased intraocular tension in coma. Several years ago Krause and Heine made the first report of the presence of this sign in diabetic coma. Few observations have been made on the subject, and the standard textbooks on ophthalmology given only a few lines to its discussion. Recently A. J. Patek of Milwaukee, reporting on a series of cases of diabetic coma, brought out the importance of the sign as a diagnostic and differential diagnostic point in such cases. He points out that it frequently occurs in diabetic coma, and is readily detected by digital palpation. In these cases usually both globes are affected, although one may be considerably softer than the other, both having a putty-like feel. He notes that tension lowers as the coma deepens. The condition is not found in diabetic acidosis without coma, or in any other type of coma. It has no prognostic value in diabetic coma, its presence serving only as a differential sign as to the type of coma one is dealing with. The cause of its presence is merely conjectural, though thought to be due to dissemination of ketonic products in the blood.

Caution is given against the application of a tight bandage over the eye in cases of fractures of the skull where the patient is unconscious. Pressure so applied, attendant with marked reduction of intraocular tension, may result in detachment of the retina, ulcers of the cornea, or both.

A rare condition, of general interest, termed ophthalmomalacia, or morbid softness of the eyeball, was discovered by von Graefe, and believed by him to be due to a lesion of the sympathetic. It may result from trauma of the globe or disease or injury of the cervical spine. The condition may be intermittent, lasting a few hours or days with long periods of normal tension in the interim. Prognosis favorable.

Decreased intraocular tension should be looked for:

1—In coma as a diagnostic and differential diagnostic aid.

2—Injuries to the eyeball, structures adjacent thereto, and skull injuries.

3—In an eye showing reaction of inflammation, and in any case giving history of sudden loss of a part or the whole of the visual field.

4—In injury or disease of the cervical spine, and following operation for removal of the cervical ganglia.

GYNECOLOGY

TREATMENT OF DELAYED MENSTRUATION WITH PROSTIGMIN

Abstract From *Western Journal of Surg. Obst. & Gyn.*, Feb.

L. L. Grossmann, M. D., Milwaukee

Realizing that in a series of patients with amenorrhea but no pelvic or endocrine abnormality, unsuspected pregnancy might in some cases be the etiological factor, and fearing the possibility that this might be disturbed by injections of prostigmin, Soskin *et al* conducted a preliminary study in which varying amounts of prostigmin were given to freshly impregnated rats. Upon observing the lack of a deleterious influence on gestation in these animals the main part of the investigation was taken up. Twenty-three patients presenting physical signs and symptoms of early pregnancy together with a positive modified Aschheim-Zondek test (Friedman) each received 1 or 2 cc. of prostigmin* intramuscularly on each of three successive mornings. In no instance did uterine bleeding occur, nor was the pregnancy disturbed. Contrasted with this was a series of 25 patients in whom pregnancy was ruled out by history and physical examination and by a negative Friedman test when necessary. Again prostigmin was administered according to the same general dosage schedule, with the exception that some of the patients received only 1 or 2 injections. Menstrual flow invariably followed, the onset occurring on an average of 28 hours after the last (sometimes after only one) injection. Their observations led to the conclusion that, "The constancy of the results in menstrual delay and the lack of effects on pregnancy make it possible to use prostigmin as a combined treatment of menstrual delay and a therapeutic test for pregnancy."

The present study is largely on the same order and confirmatory. The experimental series comprised 30 patients, ranging in age from 19 to 46. With few exceptions the previous menstrual history was essentially negative. The menstrual delay which elapsed before prostigmin therapy was undertaken varied widely, the shortest interval being five days and the longest 25 days. In a few cases, due to habitual irregularity, the number of days late could not be estimated readily. The therapeutic procedure consisted, in general, in injecting 1 or 2 cc. of prostigmin on each of three successive days. In a few instances it was necessary to deviate from this plan, inasmuch as flow had already begun before the appointed time for the second or third injection. At no time were there any complaints of toxic effects.

With one exception, in those cases with amenorrhea not induced by pregnancy, resumption of menstruation followed the prostigmin injections. The apparent inconsistency is not difficult to explain. The patient's age, 46, places her in the menopausal group. No patient presenting evidence of endocrine abnormality, even that of physiologic involution, can be considered a *bona fide* subject for evaluation.

In one case 14 days at least elapsed between the cessation of the first episode of bleeding and the first signs of tubal rupture, so any detrimental action of prostigmin upon the pregnancy is almost inconceivable. In this case, too, the bleeding was not typical of menstrual flow, and amenorrhea is not as constant a symptom in extrauterine pregnancy as in normal gestation. It is perfectly possible, therefore, for the abnormal flow to have occurred as a usual part of the clinical picture of ectopic pregnancy.

It has been suggested that in the presence of a positive urine test, a response to prostigmin similar to that noted here may prove to be of some help in the diagnosis of ectopic pregnancy. Confirmation of this point will require repeated investigation.

There was only one real instance of a discrepancy between the prostigmin test and the Friedman modification of the Aschheim-Zondek procedure in which the former was in error. In our opinion it is important that the patient be carefully instructed as to the purposes and signifiance of the test. Under no circumstances should she be allowed grossly to misinterpret the procedure as an attempt to terminate the pregnancy. Such misconception is to be strenuously avoided.

Summary and Conclusions

Prostigmin methylsulfate has been administered intramuscularly to 30 patients with delayed menstruation and the previous results and conclusions of Soskin, *et al.*, have been confirmed.

No toxic effects have been observed.

The results indicate prostigmin to be a valuable agent for precipitating the menstrual flow in cases of amenorrhea without definite organic background.

The encouraging observations in this series suggest further investigation of prostigmin as an aid in the diagnosis of pregnancy.

*Supplied by Hoffmann-La Roche, Inc., Nutley, New Jersey.

QUININE IN LATE PREGNANCY TO LESSEN DIFFICULTIES OF LABOR

(Linton Smith, Atlanta, in *Med. Times*, Feb.)

During the last few years many physicians in foreign countries have advocated the daily use of small quantities of quinine salts in the last week of pregnancy, to lessen the difficulties and dangers of labor. I have used this method for six years with the utmost satisfaction; it has shortened both the first and second stages of labor and retarded the usual complications.

Hewetson gave quinine to all of his pregnant patients with the intention of preventing malaria. He observed that these patients had easier and shorter confinements, that their lying-in periods were shortened, and that morbidity was diminished. Other physicians have reported labor shortened by hours in both primiparas and multiparas when quinine was used; that there was little hemorrhage and less shock; that ergot and pituitrin were rarely needed; and that quick recovery followed by uniformly good retraction was obtained.

I have been unable to find unfavorable reports on this cheap and harmless method of shortening the duration of labor, and lessening the dangers which are always connected with parturition. There are no contraindications to the use of quinine, except an idiosyncrasy.

Only normal cases were selected for the quinine treatment and some were delivered normally who evidently would otherwise have become problems.

I have used quinine dihydrochloride 1.5 gr. just before each regular meal; beginning three weeks before the expected onset of labor and continuing further if labor does not come on at the expected time. Other salts of quinine may be just as useful.

Infant mortalities have been reported from mothers having been given quinine, but in every case that I have investigated large doses of the drug have been ingested, usually in a very short space of time, and often in an effort to induce labor, for which it is worthless.

It is not difficult to detect symptoms caused by the drug if undue sensitiveness exists, when it can be promptly discontinued. I have had no case of death or deafness, nor has one been reported to me by any of a large number of correspondents.

HOSPITALS

R. B. Davis, M.D., *Editor*, Greensboro, N. C.

LET'S NOT FORGET

In this day of stress, war, and income tax trouble, it would be well for the hospital world to take stock of itself with a view to retaining those high principles for which it was created. The hospital is a haven of rest for the sick and suffering. Yet there are some who seek to shake faith in these beneficent institutions.

Let us start with the Board of Trustees and let us say to them that the position that they hold is not only an honorary position, but it also carries a great responsibility, one that is too often taken too lightly. Some Trustees never darken the dors of the hospitals year in and year out. Perhaps 90 per cent of the members of the Boards of Trustees in the United States are much more concerned with the black and the red than with the services rendered the sick. I should be happy to know that I am mistaken. All of the hospital personnel would be delighted if each member of the Board of Trustees would take

some special Department for his special interest. Criticism from any Trustee is welcomed by any member of the hospital personnel.

We of the staff have much to remember, first of all the Hippocratic Oath. War does not excuse relaxation of principles. Rather it calls for their higher exemplification, there is more suffering and more pathos than ever before in the history of the world. Many of the staff are in uniform. Those who are left find long, toilsome days; but no one will regard them as hard days, that is, no one who considers it a privilege to serve one's fellowmen. We shall find the nursing personnel often changing. The new nurses are not quite as rapid and efficient as the older ones were. Many of them have husbands, brothers, and sons in the war. We shall have to be patient with them.

As a member of a number of hospital staffs, the writer solicits patience, thoughtfulness, and loyalty of the staff members of the group. For those who leave family and practice, it is incumbent upon those who are left to maintain the continuity of their practice until they return.

We ask to remember of the nursing personnel, that their duty is just as great to the sick and suffering at home as it is to those in uniform. It would be shameful for these great professions to show a disposition to take advantage of the people in a mercenary spirit.

The other personnel gets all of its stimulation from the nurses and doctors and it is our responsibility to imbue them with a great spirit of service, which is so necessary for their sometimes unpleasant and difficult jobs. To the orderlies, the maids, and the janitors, we offer sympathy and encouragement and ask their loyalty and coöperation. Salaries cannot be increased every time the price of eggs and butter goes up, but there will always be a provision for those who are loyal to the hospitals as their employers. What is more satisfying to this group of people, is to know that they are considered faithful to their positions and are appreciated.

Let us not forget, therefore, that we have a standard of service to uphold and maintain through peace and war. Let us not lose the personal touch between the sick and his haven of rest, that touch which has designated this service as that closest to the service rendered by our Savior.

X-RAY RISKS.—It will probably do little good for röntgenologists to continue to present papers on röntgenologic risks to members of the national societies, who already know about such risks. Rather, the missionary work should be done by safety committees through local medical societies and their journals, since it is not the röntgenologist but the physician who does "a little X-ray work" who needs protection.—*Edi.* in *Radiology,* Feb.

PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor,* Greenville, N. C.

Material for March and that for April have been interchanged.

MILESTONES IN NORTH CAROLINA PUBLIC HEALTH

(Continued from last month)

1912—Bulletin increased to 40,000 edition. Hookwork work extended and county funds appropriated to supplement state and Rockefeller Foundation funds for this work. Annual appropriation, $22,500.

1913—General Assembly passed Model Vital Statistics Law with $10,000 appropriation for its enforcement. County superintendent of health changed to either county physician or county health officer, depending on whether part-time or full-time service. The State Sanatorium for Treatment of Tuberculosis turned over by Extra Session of 1913 to the management of State Board of Health.. Annual appropriation, $40,500.

1914—Board of Health took over management of Sanatorium; started out under many difficulties on account of the institution owing many debts and the appropriation being limited. Hookworm work changed to community work directed to the installation of sanitary privies for all homes. Laboratory began to produce and distribute free antityphoid vaccine. Annual appropriation, $40,500.

1915—General Assembly makes state vital statistics law conform to national model by requiring burial permits in rural communities; enacts legislation permitting county commissioners and towns and cities to appropriate money for support of tuberculous citizens in State Sanatorium; provides $15,000 for purchase and building antitoxin plant; appropriates $60,000 for payment of Sanatorium debts and new buildings and other improvements, and $25,000 annually for maintenance and $10,000 for extension anti-tuberculosis work. Bulletin now 47,000; traveling public health exhibit shown at fairs and other assemblages; press work greatly developed through employment of Miss Kate Herring, a journalist, for her whole time; stock lectures with lantern slides supplied public speakers in different parts of the state; community soil pollution work under Dr. W. P. Jacocks stops in April, and Bureau of Rural Sanitation, with Dr. G. M. Cooper at its head, succeeds,

beginning work May 1st. The unit system of county health work gets a good start; over 52,000 people given three complete vaccinations against typhoid fever, and medical inspection of schools put on in six counties. Annual appropriation, $50,500.

1916—North Carolina was admitted to the Registration Area for deaths. To the educational agencies of the Board was added a self-supporting moving picture health show. Bulletin reached 51,000 edition. Coöperation with University in developing a plan and putting on a home post-graduate course in medicine, giving first course to 169 doctors. Put in operation an optional system of hotel inspection, with grading and publishing scores. Continued Bureau of Rural Sanitation, giving three anti-typhoid injections to 48,000, making 100.000 immunized in summers of 1915 and 1916. Did complete medical inspection of six counties. Secured effort by Federal Children's Bureau to develop unit of child hygiene work, the Bureau using two employees to work in Cumberland and Swain Counties for about eight months. Laboratory of Hygiene buys land and erects its own building. Annual appropriation, $55,500.

RADIOLOGY

Drs. Lafferty and Baxter, *Editors*
Charlotte, N. C.

RONTGEN AND HIS RAYS

From an Editorial in *The Bulletin of The American Society for the Control of Cancer,* for February.

It was while experimenting with cathode rays in his Würzburg laboratory that Röntgen stumbled on x-rays. He was working with a Crookes' tube, "nearby was a paper coated with barium platinocyanide." The room was dark. When the high tension current passed through the tube the paper began to sparkle. Röntgen placed a black paper over the tube but the chemical still glowed with fluorescence. Then he realized that he had discovered cathode rays of great penetrative power which traversed a considerable distance. Röntgen gave the name x-rays to his discovery, to indicate that their nature was unknown.

For the first few days after his discovery Röntgen ate and slept in his laboratory. He worked for eight weeks before he made any public announcement of his discovery.

At the outset, the lay world regarded the Röntgen discovery merely as a new photography that penetrated the cloth, flesh, in fact practically all materials except platinum and lead.

A few days after the announcement of the discovery a firm in London advertised the sale of "X-ray-proof underwear." A bill was introduced in the New Jersey Legislature "prohibiting the use of X-rays in opera glasses in theaters."

Early in 1896 the rays were used to locate a bullet in a man's leg. Within a year the ray was an essential part of diagnosis. The next logical step was towards therapy. Skin diseases yielded to the rays. In fully a third of all the cancer cases today this method of treatment is employed.

The X-rays, like radium, took a tragic toll of some of the pioneers who worked with them before precautionary measures were known. They developed what came to be known as X-ray cancer, born of exposure to the rays.

One of the most eminent victims was Dr. Heinrich Ernst Albers-Schönberg of Hamburg. He developed cancer in 1908 after long experimentation with X-rays and died of it in 1921. Among the many who succumbed to cancer induced by exposure to X-rays are Clarence Madison Dally, Elizabeth Fleischman Ascheim, Louis Andrew Weigel, Wolfram C. Fuchs, Rome Vernon Wagner, Thurman Wagner, Mihran K. Kassabian, Walter James Dodd, Stephen C. Glidden, Eugene W. Caldwell, Robert H. Machlett, Heber Hobards, William Krauss, Burton E. Baker, William Carl Egelhoff, and Frederick Henry Baetjer. The victims of the disease kept to their tasks, often after the loss of fingers and hands and in almost constant pain.

Science has traveled far since that November night when Röntgen first saw the fluorescent glow in his little laboratory in Würzburg. No subsequent scientific advance has been of greater service to humanity than the one he made possible.

SENILE ECTASY

(R. S. Berghoff, et al, Chicago, in *Ill. Med. Jl.,* Feb.)

A preliminary report of an investigation of 400 of a total of 1,000 cardiac patients in the age group 50-80, over a period of 5½ years, and embodies case histories, physical examinations, percussion measurements checked by telefluoroscopies and electrocardiograms.

The most common forms of heart disease encountered in senescence are: (a) arteriosclerotic; (b) hypertensive; (c) syphilitic; (d) rheumatic; (e) thyroid.

The earliest subjective symptoms: (a) dyspnea; (b) heart consciousness; (c) pain.

The most important diagnostic physical sign is altered configuration of the heart.

Percussion carefully carried out is reliable and has greater diagnostic value than auscultation.

Telefluoroscopy is a simple, economical and practical diagnostic adjunct to percussion.

The electrocardiograph furnishes more help in this age group than in any other types of heart disease.

UROLOGY

For this issue WALTER E. DANIEL, M. D. Charlotte, N. C.

AFTER PROSTATIC RESECTION

NO OPERATION IN UROLOGY requires more careful and diligent postoperative care than transurethral prostatic resection. Frequently the postoperative management determines the type of result. This fact should be impressed upon the patient to assure his coöperation which is essential.

It is requisite that all of the obstructing tissue be removed and that the new channel be comparatively smooth. Starting from this point, the postoperative care is divided into two phases . In the first 12 to 14 days, time the patient remains in the hospital, the treatment is directed toward the prevention and stoppage of bleeding, the drainage of the bladder, and the reëstablishment of the patient's eating and bowel habits. The bladder should be drained with an indwelling urethral catheter for four or five days, depending upon the amount of tissue removed. Of late, we have used as small as No. 16 and No. 18 F. These can not be used if there is bleeding. Very seldom is it necessary to use a catheter larger than No. 22 F. The use of small catheters allows better drainage of the urethral secretions, which lessens the probability of severe urethral infections and stricture formation. The late phase is not so well standardized. Upon discharge from the hospital, the patient is instructed to remain more or less inactive at home for at least two weeks, after which activity can be gradually resumed. Occasionally the urine will become blood-tinged. If clots form, he is to return to us at once. The evacuation of the clots from the bladder and catheter drainage for a day or two always control the bleeding. Beginning six weeks to two months after leaving the hospital, the prostate should be massaged once weekly. Two months after discharge, sulfathiazole, 30 grs. daily, is given for four or five days. During this course, the prostate is massaged e.o.d. and the urethra is dilated up to No. 28 F. Tests are made for residual urine.

It is noticed that sulfonamides are not given until 2½ months after operation. Before this time, these wonderful drugs have little if any permanent effect, and they may sensitize the patient, preventing their later use.

Usually by the end of 10 to 12 weeks, there are no symptoms of prostatism, no infection, and no residual urine. Unfortunately, all cases are not terminated so happily. Rarely a patient will continue to have gross hematuria at times. It is usually due to incomplete removal of the obstructing tissue or the persistence of infection (usually both). If these routine measures fail to eradicate the infection and stop the hematuria, another prostatic resection should be considered.
—Thompson-Daniel Clinic

THOMPSON is a name which has for a long time been famous in the specialty of genito-urinary diseases. Sir Henry Thompson (born 1820) the London specialist in this field, did a lithotomy on Emperor Napoleon III, in 1873.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

FRACTURES OF THE WRIST

HERE is an abstract of an article[1] telling us what to do with a condition of great importance in the general practice of medicine. And nowhere does Dr. Hoshall even suggest that nobody but a specialist should treat a fracture.

Requisite for satisfactory treatment of all fractures are true A-P and lateral, also post-reduction x-ray pictures. For simple fractures not impacted or without involvement of the radio-ulnar articulation a wood splint anterior and posterior—cut the width of the wrist, forearm, and hand and snugly strapped in place with adhesive—is preferable to the ill-fitting anterior metal splints. Plaster casts give the best immobilization and should be used whenever possible.

All impacted and displaced fractures should be reduced under general anesthesia. Nearly all comminuted and impacted fractures of the radius and ulnar can be reduced with traction and countertraction. Rarely is manipulation necessary. The assistant need be only a person who has enough intelligence to follow directions.

Local anesthesia may be used, but only with the same aseptic technique as would be used on any operative procedure, and on individuals not easily upset.

After reduction the assistant holds the forearm in the position in which it is to be immobilized and a cast is applied from the middle of the arm *to tips of fingers* with elbow at right angle. Flexion and ulnar deviation are necessary to restore the proper relationship between the bones of the forearm at the radioulnar joint and between the lower end of radius and the navicular and lunate bones. It is easier for untrained help to hold the forearm in pronation rather than supination and it does not make any difference in the end results.

After the first week that portion of the cast beyond the middle of the palm should be removed to allow free motion of the metacarpophalangeal and interphalangeal joints, thereby stimulating circulation. All patients should be urged to exercise

1. F. A. Hoshall, Charleston, in *Jl S. C. Med. Asso.*, Mar.

the shoulder. Very little padding should be used except over bony prominences—the medial epicondyle, the olecranon, and the lower end of the ulna. If the swelling is extensive as soon as the plaster is set it should be split to allow for further swelling. The position should be maintained for at least 3 weeks, after which time this cast is removed and a cast applied from below the elbow to the middle of the palm with correction of the flexion but retention of the ulnar deviation for another 4 to 6 weeks or until bony union is firm. The latter cast should be bivalved, and gentle massage, passive and action motion instituted.

In badly comminuted fractures of both bones of the forearm at the wrist, constant traction and countertraction must be maintained over a number of weeks until sufficient new bone has formed to hold fragments in place. Most satisfactory is insertion of a Steinman pin in the upper end of the ulna and a small pin through the base of the distal phalanx of the thumb. A plaster cast is applied incorporating the Steinman pin in the cast, a banjo splint is then incorporated in the cast and traction is applied to the small pin through the thumb producing ulnar deviation and excellent alignment of the fractures. In badly comminuted fractures of the articulating surfaces of the radius hypertrophic changes can be expected.

Fractures of the carpals, even if the fragments are not displaced, require absolute immobilization for not less than 2½ months. Fractures of the carpals require oblique views in addition to the A-P and lateral.

The growth center of the epiphysis at the lower end of the radius fuse with the shaft about the 20th year. Trauma to the epiphyseal cartilage makes very little difference. Slipped epiphysis before 18 may cause growth disturbance, the ulna continuing to grow and displace the hand toward the radial side .

The medical part of treatment of fractures:

1. Calcium gluconate—in children at least 30 grs. and adults at least 60 grs. t.i.d. p.c. This is practically tasteless and may be taken in warm milk or water.

2. Ten to 20 drops of 10% HCl in water before meals will stimulate HCl formation in the stomach and, so, calcium utilization. Cod liver oil (or the concentrated pearls of vitamin A and D), citrus fruits for vitamin C, plenty of fresh milk, butter and vegetables will furnish the remaining necessary vitamins.

Heat and massage are indicated after the first week.

Active exercises should not be used on stiff fingers as they increase the disability rather than decrease.

Exercise under hot water to increase the circulation.

After the average simple industrial fracture the man should be back in active production within six weeks. The badly comminuted may disable for as long as four months, and as much as 25% disability can be expected.

RUPTURED UTERUS AT OR NEAR TERM

(J. H. Dugger, Philadelphia, in *Penn. Med. Jl.*, Feb.)

Dangers of administering posterior pituitary extract to a patient during labor are well recognized. The prevention of ruptured uterus must be accomplished through an improvement in the technical skill and judgment of the obstetrician. The attendant is advised to obtain prompt and competent consultation in the presence of abnormal conditions in all obstetric patients.

In threatened rupture generally, if cervix is partially dilated, with disproportion, malposition, or an unengaged presenting part, delivery by cesarean section is the method of choice; if the presenting part has descended below the ischial spines, vaginal delivery employing the utmost gentleness.

When rupture has occurred, laparatomy with hysterectomy or repair of the rupture is the choice, since the risk from infection would probably be less than the danger of death from shock and hemorrhage.

A series of 105 cases of ruptured uterus at or near term occurring in Philadelphia County over a 10-year period has been studied. Sixty-five patients died and 40 recovered. The incidence of ruptured uterus was one in every 3029 births; 56 (86.1%) of the deaths occurred following operative delivery.

Internal podalic version was the most frequent method of delivery associated with ruptured uterus.

Fifty-five (84.6%) of all deaths were considered preventable.

Adequate prenatal care, judgment and skillfully performed deliveries will reduce the too frequent occurrence of ruptured uterus.

VARIATIONS BETWEEN ORAL AND RECTAL TEMPERATURE READINGS

(Harold Stadler, Iowa City, in *Jl., Iowa State Med. Soc.*, Feb.)

The subjects were hospitalized patients of boy's and girl's convalescent wards, age from six to 16 years. The temperature of the two wards were from 78 to 84; the relative humidity 32 to 50%.

No food or drink for 30 min. preceding, oral and rectal temperatures were determined at the same time. The thermometers used were checked with each other and with a certified thermometer.

The rectal readings differed from the oral by from —1.0 to +3.2; in two instances the oral readings were higher than the corresponding rectal. The rectal reading was greater by an average of 1°. The difference between the rectal and oral temperature was not constant for the same subject at different observations.

An oral temperature reading cannot be accepted as an accurate indication of internal temperature; wide variations are to be found.

The appendicitis death-rate has reached a record low point, after a long and steady rise culminating nearly a decade ago. In 1940 the adjusted death-rate from this cause was 8.9 per 100,000, the lowest in the experience of the company [Metropolitan], and represented a decline of nearly 40% from the high rate recorded in 1929; there is every indication the death-rate in 1941 will again set a new low record.—*The Diplomate.*

CLINICAL CHEMISTRY AND MICROSCOPY

THE TECHNIQUE AND INTERPRETATION OF THE VAGINAL SMEAR

Note:—Method of Dr. Robert B. Greenblatt, Professor of Medicine, University of Georgia, School of Medicine, Augusta.

A small wooden spatula or ordinary cotton applicator is moistened with tap water. Use a speculum if necessary. Spread the folds of the vulva apart, insert the spatula into the vagina and rub gently along the lateral wall. Only surface epithelium should be obtained. The secretions procured are transferred to a glass slide by passing the spatula across it. The slide is stained for 15 seconds with aqueous fuchsin and then washed, dried and examined. The purpose is to determine the proportion of the size of the nucleus to the size of the cell. It is well to rule out vaginitis due to monilia or trichomonads, as well as cervicitis, as this will prove of value in interpretation. Pick a clean section of the vagina, free of cervical secretion. Hence the value of the speculum. The interpretation of the vaginal smears offers a little difficulty at first but proficiency is soon acquired. Reading of the smears varies from the negative "castrate" or 1-plus reaction, on to a positive "estrus" smear or 4-plus reaction. There are occasional inconsistencies and variations in the vaginal smears from the human vagina. It is thought that in some patients there may be compensatory extraneous sources of estrogen-like substances, probably adrenal in origin. In general, as has been emphasized by Geist and Salmon, the vaginal smear is a simple and reliable procedure for determining normal ovarian activity or estrogen deficiency. Patients manifesting a menopause-like syndrome but in whom normal estrus smears are repeatedly obtained are excluded from the menopausal group. Whenever the vaginal smear indicates an estrogen deficiency it is our custom to administer massive doses of estrogen until a 4-plus reaction or positive smear is obtained. Usually 5-10 mg. of *a*-estradiol dipropionate, or 15,000 to 30,000 r. u. of *a*-estradiol benzoate, administered within a period of 7 to 14 days, is sufficient to obtain an excellent estrus smear.

Using the vaginal smear method as an index, it is then fairly easy to ascertain the maintenance dose necessary to keep the vaginal mucosa at a constant level until all symptoms disappear. The unfavorable results occasionally encountered are usually due to insufficiency of dosage. The smear in these cases will serve as an indicator of the efficiency of administered estrogens (in cases of estrogen deficiency).

Scale of the Vaginal Smear

4-Plus Reaction—large foamy desquamative epithelial cells with poorly staining cytoplasm, with or without small pyknotic nuclei; classified as positive, follicular or estrus smear.

3-Plus Reaction—desquamative and large oval cells.

2-Plus Reaction—oval cells and occasional castrate cells.

1-Plus Reaction—basal cells, small round immature cells with large, deeply staining nuclei, and relatively small amount of cytoplasm, frequently accompanied by many polymorphonuclear leucocytes; classified as negative, estrogen deficient or castrate smear.

Preparation of Stain

Any dye suitably diluted and filtered will suffice. Gentian violet, methylene blue, carbol-fuchsin will do. We use several large crystals of fuchsin (fuchsin for bacterial stains), and dilute it with water so that a magenta (red) coloration is obtained. This when filtered is ready for use and will keep indefinitely. Several hundred cc. of staining solution may be prepared from 1 gm. of fuchsin.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

THE SURGICAL TREATMENT OF ANGINA PECTORIS.

Back in 1920 Jonnesco reported a case of angina pectoris treated by resection of the left cervical components of the sympathetic system, under local anesthesia, with resultant relief of practically all pain in a severe case in which the pain was prolonged and agonizing.

One of of the most severe pains known to the human race is that experienced by an individual suffering one of the more severe atcaks of angina pectoris. In addition to the terrible pain there is usually the feeling of impending death during these attacks.

Patients suffering frequent attacks lead lives of misery and apprehension. Often the so-called milder cases are distressing, disabling and demoralizing. Patients never know when an attack will come but they know that it will likely cause such intense pain and terror that death would seem a welcome relief.

There are a number of theories as to the cause of the pain of angina, the most likely appears to be an irritation of the cardio-aortic plexus. Another reason assigned is that the disease of the coronary arteries interferes with the blood supply to the parts supplied by the coronary arteries. It is possible, however, to have angina without any apparent disease of the coronary arteries.

A reasonable explanation is that the pain is caused by a reflex originating in the aorta or in the cardio-aortic plexus, producing constriction of the coronary arterial system with consequent ischemia of certain areas of the heart.

To prevent these vaso-constriction reflexes by severing the nerves that produce the vaso-constriction is the purpose of the treatment of angina pectoris. Most cases in which surgical treatment has been carried out are those in which medical treatment has failed to give relief.

At first the left cervical sympathetic was severed from the superior to the middle ganglion, and the main trunk of the superior cardiac branch severed. A number of operative procedures have since been advocated, but resection of the lower cervical and upper thoracic sympathetic ganglia seem to be the most satisfactory. It has been shown that cutting the superior cardiac branch of the cervical sympathetic on the left side and the main trunk below the ganglion has given relief in the majority of cases thus treated.

Relief from these attacks promises prolongation of life. In any case in which relief is incomplete from the left-side sympathectomy, it may be that the right side is also involved, and a sympathectomy on the right side is indicated.

Sympathectomy is sometimes tedious and difficult, particularly when there is any deformity of the spine. In any case it is a major operation.

A number of other simple and more easily applied procedures have been employed, among these the paravertebral injection of novocaine solution on the side of the severest pain, which usually will give immediate relief from frequent and prolonged attacks. By exercising great care, after the novocaine injection has produced complete analgesia, it is possible to inject the same area with a small amount of 95 per cent alcohol, and so make the relief more or less permanent.

This procedure requires a very accurate knowledge of the anatomy of the spine, the spinal nerves and the sympathetic nervous system and the ability to pass the point of the needle to the exact point where the solution should be deposited.

After the anesthetic has had time to act and the anesthesia has developed in the axilla and over the third and fourth ribs and the left arm becomes very warm and dry as compared with the opposite arm and hand, we know that the anesthetic has reached the spot and had its proper effect. Then we can use an additional amount of novocaine and follow this later by a very careful and meticulous injection of alcohol to produce permanent results.

This should be done by no surgeons other than those experienced in this work and familiar with the fine points of technique that are necessary in order to do this properly.

In these cases it is necessary, too, to remember that we are dealing with patients who are very ill, often with badly diseased hearts, and this requires that the greatest possible care be taken in administering this treatment. The fact that this procedure can be carried out with very little pain to the patient and with good hopes of success and very little disturbances to the body functions is of primary importance and is a tremendous factor in determining the type of treatment to be given in these cases.

When medical treatment has failed to relieve the pains of angina this treatment should certainly be considered, and is usually the treatment of choice.

We have found that this will give relief in the majority of cases from the agonizing pain, and the procedure can be carried out with a minimum of danger.

President's Page

Address

As President-Elect of The Tri-State Medical Association

George R. Wilkinson, M. D., Greenville, South Carolina

MR. PRESIDENT, Ladies and Gentlemen: Unworthy of this office as your president-elect, soon to become president, may be, he is, nevertheless, grateful for this opportunity given him to serve you. In the beginning, your attention is directed to the fact that the president of this body is but the acting chairman of the group. The really important factor in the Association is to be found in its distinguished membership, so through the year your suggestions, cooperation and labors will be expected. The outgoing administration with the earnest work of the Association as a whole has set up a high standard of excellence for the year. Many members have remarked about the excellence of the program this year. It sets a standard that will be hard to equal or surpass. Next year we meet in Lynchburg. Since there are no extraordinary war activities nearby, we are assured of adequate hotel accommodations. The invitation to meet in Lynchburg is sponsored not only by our Councillor, Dr. J. W. Davis, Jr., but also backed up by the County Medical Society, the hotels and civic organizations. This place of meeting is readily accesible for our guest speakers and for our members, new and old, who will come from considerable distances. It is the plan of the administration to have as guest speakers a few of the men from the president's graduating class who have distinguished themselves in various fields. Some have already consented to come.

In this day and time, competition is keen in every walk of life. Even churches of the same denomination compete with each other and so do medical societies. In order for any Society to survive, it must continue to grow. Our own group has had a healthy growth, each year bringing a net increase, despite the competition of so many new special societies. We should not depend on our secretary, Dr. Northington, to promote its growth entirely. Every interested member is asked to pass on to his medical friends information about this group so that he or she may have opportunity to participate in its benefits. Emphasis is laid on the fact that this organization is purely voluntary, that it does not meet in sections, that it meets close by, that it exercises no political sovereignty over its members, that it wastes no time dealing with political and economic problems which fall properly into the sphere of other societies. The program will be confined in the future, as in the past, to the great problems of the sick.

Perhaps there is no other part of the country with a membership as uniformly all-American as this Society boasts of. Since the first settlers moved in between the Virginia Capes and the estuary of the Savannah, Virginia and the Carolinas have seen each others problems eye-to-eye, in peace and in war. Through the medium of this enterprise much can be done to further the scientific interests of this section we love so well.

This Association was organized in 1898 by the foremost doctors of the two Carolinas and Virginia and from that kind of doctors has its membership been recruited and increased. I am proud to be privileged to prescribe over this Association's affairs for the year to come, and I bespeak the active cooperation of every member.

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As is true of most Medical Journals, all costs of cuts, etc., for illustrating an article must be borne by the author.

CO-OPERATION OF FAMILY DOCTOR EASY TO GET

THERE IS NO END of speaking and writing on the responsibilities of the family doctor as to cancer, mental disease, tuberculosis—everything. He sees the patient first, has the confidence of the family and all that. It is pertinent to remark that in too many instances he never sees the patient again, and that whatever of the confidence of the family he manages to keep is in spite of the superior and slighting attitude of a lot of specialists.

Not long ago a surgeon invited from a distance to address a medical society made up almost wholly of general practitioners told his hosts and fellow-guests that a certain procedure is not difficult: "One doesn't have to be a surgeon; anybody can do it; a nurse can do it, even a general practitioner can do it." And he was not joking. It was so natural to his habitual mode of thought about general practitioners that he did not remember, an hour afterward, that he had said it.

In the past week a woman who had been operated on some time ago went back to the city to report to the surgeon. The husband went along, and, as he was about to leave, he said to the surgeon: "Doc, I've got eczema in my ears, what's good for it?" Was he advised to go to see his home doctor? Not by a jugfull. Said the surgeon: "We doctors divide folks up. That doesn't come in my field." And he called a dermatologist and made an appointment for the next few minutes. The victim did not look like he was enjoying the arrangement, but when country folks come to town they just can't defend themselves.

A psychiatrist writes[1] from a State hospital for the mentally diseased, pointing out the need for closer coöperation between the general practitioner and his kind of hospital. Here in essence, is what he has to say:

The family physician is often able to postpone the time when hospital confinement becomes imperative. Frequently the sending of the patient to the mental hospital is done as a last resort. The family physician, relieved of his responsibility and of the sense of frustration is likely to terminate his interest in the patient's illness.

It is the exception for the family physician to request information from us about patients in the hospital. Yet it is to him that we could best explain the difficulties and problems of the particular case.

It is to patient's and physician's interest that the physician remain in close contact with the pa-

1. Nathan Blackman, Clarinda, in *Jl. Iowa State Med. Soc.*, Mar.

tient's course and with the problems that this hospital stay causes in the family. For patients who recover entirely, the home setting has to be changed for convalescence. The local practitioner is in an ideal position to continue psychotherapeutic interviews when indicated and, in general, to take charge of the patient's mental health at the point where the state hospital leaves the patient who is returning home.

The epileptic patient needs his dilantin, the syphilitic patient his specific, the diabetic patient his insulin, the parkinsonian patient his stramonium, the arteriosclerotic patient his nicotinic acid and the alcoholic patient his benzedrine. The practitioner who remains in touch with the patient's course in the hospital is in a better position to resume and maintain the therapeutic regimen of the patient.

The state hospital must keep the family physician advised of the patient's course, the response to treatment and any significant changes. He will then be able to advise the family as to why a consent for treatment is necessary, why an operation imposes itself, or a release from the hospital; he will be able to educate the family to the needs of the safeguards required. The practitioner may arrange for monthly or bimonthly psychotherapeutic interviews with the patient. Changes in the mental picture will occasionally be observed and the early rectification of these changes will often obviate rehospitalization. In other cases danger signals may be observed and the patient returned to the hospital, thereby preventing an accentuation of the psychotic process and thus facilitating recovery.

The local doctor's role as intermediary between relatives and hospital is one of great importance; also his activities in maintaining mental hygiene postulates before his clientele in harmony with the best principles of mental hygiene.

Evidently this doctor takes the family doctor seriously, judges his function to be something more than that of admitting clerk who tells the patient what specialist he must go to see, has some regard for the family doctor's ability as a therapist.

In Iowa, just as it is along the Atlantic seaboard, family doctors will gladly coöperate with specialists having temporary charge of their patients; but the specialists must *keep* it in mind that *co* means "with or together."

No family doctor should have to write to a State hospital to find out how his patient is getting on. The State doctor in temporary charge should keep the family doctor informed, against inquiries from relatives and friends and against the day when the family doctor gets his patient back and takes up again the care of his mental and physical health. And the same applies to any other specialist and any other hospital.

Once he gets rid of the idea—conscious or subconscious—that the specialist is much wiser, greater, more important than the family doctor, there will be nothing in the way of any specialist getting the hearty and intelligent coöperation of any general practitioner.

A neuropsychoatrist in private practice[2] was writing in about the same vein. He would regard the family doctor's part as important and treat him with respect.

The general practitioner has had a phobia on the subject of mental disease for a variety of reasons. The subject had been presented in unclear and lengthy terms and a list of symptoms difficult to comprehend. The patients had been difficult to manage or to understand. The therapeutic results had been dismal. Today progress in psychiatry warrants a change in attitude from aversion to interest. The general practitioner, who is the first line of defense, should therefore consider the new concepts and the new therapies.

Practically every psychotic patient presents bodily complaints, headache, anorexia, palpitation. In the depressions, physical symptoms parallel the mood change. In melancholia any region of the body may give distressing symptoms.

Fear is responsible for disordered body physiology.

The normal person in distress seeks advice and often accepts it. The psychotic often has found his own conclusion, and this analysis may apply to others about him.

Abnormal, even destructive, behavior may be a part of criminality and not necessarily a symptom of psychosis.

In manic-depressive states, during the upswing the person is cheery, effervescent with the joy of triumph and well-being, over-active—Speaking Speeding, Spending. At the opposite pole are the depressions. Silence, a lessening of activity, an almost paralyzing self-analysis.

As schizophrenia develops, the patient withdraws his interest from the demands about him and becomes absorbed in the fantasy world which he has created. He hears voices that threaten or flatter him; he has created delusions which point the way towards grand achievement. He may identify himself with the powers that rule the universe and thus disdain the trivial tasks of ordinary mortals; or sit in a chair staring into space, a pleasant smile upon his features. He may go to bed and remain there for days. A few will stand immobile, remain for hours or days as though frozen to the floor.

2. J. L. Fetterman, Cleveland, in *Ohio State Med. Jl.*, Mar.

Some mentally-ill patients believe that they have been harmed by an individual, a group, a religion, or a nation. One may be suspicious of the taste of the food and take a sample to be analyzed by some laboratory, fearing poison. He may demand examinations and tests to find poison, write to authorities to ask for protection or to insist upon the punishment of his tormentors. The meek may hide themselves. Many will turn against their tormentors, become assaultive, even homicidal.

Delusion of persecution may occur in both the depressed and manic states as well as in the organic brain diseases.

Certain schizophrenic patients have tried to solve the problem of the universe and have finally come to the conclusion that they have been designated by God to fulfill some divine mission.

Frequently a feeling of success is expressed by cheerfulness, friendliness. Such persons may become leaders of groups and organizations.

The depressed patient who twists a handkerchief all day long, or the one who is striking himself, is using his muscular activity to divert his thoughts from his inner anxieties.

A patient with mental illness may dress, talk and conduct himself in an orderly manner. Resignation and willingness to remain inactive, plus certain peculiar ideas, are the manifestations of trouble.

The psychotic can create and live in Heaven or Hell today, not in the future. At times, the individual may doubt his own ideas, but as a rule he comes back to them and accepts them firmly.

Disorientiation as to time and place is most marked in the toxic psychoses. Most psychotic patients are capable of logical ideas along with their abnormal thoughts. It is only in the acute deliria that there is great disorientation, and only in dementia is the individual unable to express any logical ideas..

Among the organic psychoses are arteriosclerotic dementia, brain changes due to syphilis, brain tumor and brain injury, toxic psychoses represent a pathologic change in the brain cells due to deficiency, disease, high fever, chemical and other toxic agents.

The onset of mental illness may be insidious or abrupt, partial or complete, may not interfere with the patient's ability to continue the routine of his daily activity. There are periods of apparent recovery, then a recurrence of symptoms of a more serious nature, then decline to dementia.

Manic-depressive illness onset may be abrupt, tend to continue, but with remarkable spontaneous remissions and recurrences.

The essayist passes over symptomatic measures, malaria for paresis, high vitamins for deficiency psychosis, etc. Psychoanalysis, he says, has proved its worth for explaining certain mental mechanisms, but it has not proved valuable as a therapeutic tool.

After insulin-shock "cure," there is a steady tendency to recurrence over a period of five years. Metrazol now used primarily for schizophrenia, established a field of usefulness in the manic-depressive group. The most recent of these, electro-coma therapy, is being applied to the large group of schizophrenias and the manic-depressive illness. The method has practically no mortality and is tolerated by patients better than other techniques. Recoveries are accomplished in a large percentage of depressive patients, and in schizophrenia cases to warrant its continued use.

A certain interval of time must elapse before a scientific appraisal of the new methods can be established. But the practicing physician who sees an acutely mentally-ill patient today must advise therapy at the moment. Electro-coma treatment, in Dr. Fetterman's experience, offers advantages far outweighing the difficulties.

One time I asked a good doctor somewhat advanced in years why he did not come to the meeting of the county medical society. This M.A. and M.D. had a quick mind and salty tongue, and this is what he answered: "Because I'm tired out with specialists who have no education harping on the need of the general practitioner for education."

These two just quoted at length would not have occasioned that reply.

WITH YOUR HELP WE SHALL BE VICTORIOUS IN OUR FIGHT WITH CANCER

by

C. C. Little, Sc.D., Managing Director of the American Society for the Control of Cancer

The existence of the greatest emergency in our nation's history is now recognized by every intelligent American citizen. Along with the vast demands made upon our courage and patience by this situation is a keener realization of our responsibilities to care for the lives and happiness of those unfortunate people who find themselves in physical adversity.

Among the greatest of these menaces to the health, happiness and life of our people is cancer. War may take a larger toll of Americans in the years to come. Various cardiac disease conditions may do the same thing. Neither, however, will so silently, so grimly, and with such evil power to destroy the morale and the lives of our people. Whatever our emergency obligations may be, we must not let up in our warfare on this great continuing enemy of mankind.

Fear, ignorance and delay are the three allies of cancer which lead to disaster and death. Fear is being overcome; ignorance is being enlightened,

and delay periods are being shortened. Cancer can be robbed of its perils by knowledge of its early signs and symptoms and of the methods of fighting it. The American Society for the Control of Cancer throughout the country has for years been engaged in this warfare. It is making progress. It must not lose the gains made, and indeed must drive ahead.

In warning against cancer we are warring against our foreign enemies. The methods are much the same. The qualities appealed to in the individual are similar. The complete victory to which our President pledges us should stimulate each of us to pledge him- or herself to more energetic and more persistent exertions in our warfare against cancer. Both victories can be gained. We must recognize how closely they may be related each to the other and put forth all our courage and all our energy to speedily and surely bring victory in both wars.

VAGINAL HYSTERECTOMY—Tyler
(From Page 205)

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Sulfonamides.—In the presence of renal insufficiency, and good results obtained from very small doses.

OBITUARY

DOCTOR SYDNOR LEE MARTIN

It is said that we are the thoughts of God. If this be true, what a wonderful day it must have been when He thought of Sydnor Martin.

Graduated from the Baltimore Medical College —afterwards merged with the University of Maryland—in 1895, when he began the practice of the art and science of medicine it was far different from what it is today. Travel by buggy and on horseback over roads always bad and for many months barely passable, and many other things, made the practice of medicine truly a hardship.

He had few of the modern things that we have today to aid him in making a diagnosis; he used his five senses—still the most important diagnostic equipment—to excellent advantage, because the judgment to correlate the findings was of the finest order. I think the greatest tribute I could pay him is to say that he was a Doctor of the Old School, which is to say he was an adviser-general to his families of patients, for you know that you would tell your doctor things that you would not tell your minister.

I worked for him in his drug store and saw him go about his work with all sincerity for the good of his patients; and I saw their love for him and their confidence in his ability. I never heard him complain as to how hard the practice was; I never knew him to refuse a call from a worthy person. His life was the inspiration for me to study medicine. His memory to me is one of profound respect and love.

He could be stern, but never harsh; and his idea of justice was that it should always be tempered with mercy. His interest in civic and other things for the upbuilding of the community was sincere. He was president of the First National Bank until his death.

He was Senior Warden of the Church of Epiphany and his devotion to his church was a God-fearing example to the rest of us in the church. He was loved by both white and colored for services and kindnesses over nearly half a century. In the after life he will in no way be found wanting and he will hear the blessed words, "Well done good and faithful servant; enter thou into the joy of thy Lord."

—JOHN B. RAY.

NEWS

NEED FOR MEDICAL OFFFICERS IN THE ARMY

The Headquarters, Fourth Corps Area, at Atlanta, has requested the Medical Officer on duty at the District Recruiting and Induction Station, Charlotte, to communicate with all physicians of this area with a view to having those eligible make application as Medical Officers of the Army of the United States. This District includes the two states of North and South Carolina.

The Army requires the services of 12,000 Medical Corps Officers and the need is urgent. The greatest proportion of these officers will be taken from the age group under 45 years, and appointments in the various specialities of medicine will be available.

The general procedure for application: Three forms, obtainable from any District Recruiting Office, dealing with training and experience, must be filled in by the applicant. A physical examination must be obtained from a Board of army medical officers and the completed papers then will be sent to the Headquarters, Fourth Corps Area at Atlanta.

Communications concerning this subject should be addressed to—

Medical Officer, Charlotte Recruiting District Headquarters, Post Office Building, Charlotte.

—*THEODORE P. MERRICK,* 1st Lt. Medical Corps.

THE AMERICAN PSYCHIATRIC ASSOCIATION UNDER PRESIDENT HALL

The American Psychiatric Association, through its Committee on Psychiatric Medical Education is interested, amongst other things, in offering to psychiatrists, who cannot leave their duties opportunity for intensive graduate work. For that purpose an Institute in Psychiatry is now held twice a year in the United States—in the spring and in the fall. The spring Institute was held last year at the State Hospital, Columbia, South Carolina. Last fall the Institute was held in the State Hospital, Fort Steilacoom, Washington. The spring Institute is now in session in State Hospital No. 2 at St. Joseph, Missouri. An Institute is in session daily, all day, for two weeks. The program presents a consideration of psychiatry in its various phases, and an effort is made to review the recent adavnces in the specialties.

The leading psychiatrists of the country participate in the program. The Institutes afford an opportunity especially to the psychiatrist on the medical staff of a state hospital, who cannot get far away from his duties, to do intensive graduate work in psychiatry. A good deal of ground can be covered in the two-weeks session. Mimeographed copies of all the presentations are made available after each Institute. The Institute for the coming fall probably will be held in Texas. An effort is made to hold the Institutes in those areas in which there are few facilities for psychiatric teaching. Dr. Ashby is anxious for an Institute at his own Dix Hill in Raleigh. And he will eventually be the host of the assemblage because of the accessibility of his hospital to the various psychiatrists in North Carolina and adjacent territory.

Dr. James K. Hall, president of the Association, is to make an address at the banquet on the last night of the Institute at St. Joseph on April 2nd. On the day before he will visit institutions for the mentally sick at Kansas City, Missouri. At the close of the Institute he will leave for a visit to Kansas. While in this state he will spend some time with the Menningers, father and two sons, Dr. Charles Frederic, Dr. Karl Augustus and Dr. William Claire. Dr. Sylvia Allen, once our own Carolinian, is now a member of the staff of the Menninger Clinic. In Topeka, Kansas, the Menningers have brought forth in the domain of psychiatry work comparable to that established in surgery and in medicine in Minnesota by the Mayos a generation earlier. After Dr. Hall reaches home from this tour he will, a little later, visit a number of the southern states—Georgia, Alabama, Mississippi and Louisiana—in his official capacity as president of the Association. On May 18th to 22nd he will preside over the American Psychiatric Association at its 98th annual session in Boston. In the same city, a few days prior to that meeting, he will attend the meeting of the American Association on Mental Deficiency.

ANNALS OF SURGERY TO APPEAR IN SPANISH.

With the simultaneous publication of the June issue of the *Annals of Surgery* in Philadelphia by the J. B. Lippincott Company, and in Buenos Aires by the Guillermo Kraft Company, a new step is being taken toward the consolidation of medical interests here and in South America. This is the oldest surgical journal in the English language. As the result of negotiations and with the assistance of the Coordinator of Inter-American Affairs, and Mr. Lewis Hanke, Director of the Hispanic Foundation, Guillermo Kraft Company, one of the oldest and most esteemed publishing firms in Buenos Aires, will translate each month's issue for South American physicians and surgeons. The medical profession in this country has become increasingly aware of its obligations and responsibilities in South America. No better symbolic demonstration can be given of its sincere willingness, the eager desire, to develop permanent intellectual fraternization between the surgeons of the two continents.

The Annals of Surgery is edited by a distinguished editorial board representing medical schools and national surgical societies of the United States and Canada.

THE UNION COUNTY (N. C.) MEDICAL SOCIETY held a dinner at the Ellen Fitzgerald Hospital, Monroe, the evening of April 13th. The guests of honor were the medical officers of Camp Sutton, Lieut. Colonel C. E. Dunbar and his staff. Dr. T. C. Bost, Charlotte, spoke on Gunshot Wounds of the Abdomen; and Dr. J. M. Northington, Charlottte, on Some Instructive and Entertaining Experiences in World War I.

THE STAFF OF MEMORIAL HOSPITAL entertained at a Dinner Party, on Wednesday, April 8th in honor of Charlotte Memorial Hospital Evacuation Unit No. 38. The occasion was celebrated at Myers Park Country Club. The Unit is expected to be ordered on active duty in a very short time.

MECKLENBURG COUNTY MEDICAL SOCIETY, April 7th, 8:00 p. m., Medical Library, Charlotte.

Epithelioma: Report of 1510 Cases—Drs. Elliott and Welton.

Ureteral Transplantation—Dr. A. G. Brenizer.



A SHEPHERD'S CARE

The shepherd leads his sheep to distant mountain pastures rich in the nourishment so vital to their health and development. Instinctively, they look to him for guidance. He is their guardian—constantly on watch, always ready to protect them from their natural enemies . . . . Physicians, too, are guardians, leading their patients to better health and well-being—always ready to protect them from the invisible enemy—disease. In protecting your patients against any impairment of health that may be due to vitamin deficiencies, we earnestly recommend your prescription of Vi-Penta Perles and Vi-Penta Drops 'Roche'. These two vitamin preparations are of outstanding quality and, further—they are not advertised to the laity. HOFFMANN-LA ROCHE, INC., NUTLEY, N. J.

IN TWO FORMS—DROPS AND PERLES Vi-Penta 'ROCHE'

Drs. Lafferty and Baxter, announce the removal of their offices from the Charlotte Sanatorium and fifth floor Professional Building, to th efirst floor Professional Building (entrance 407 North Tryon street), Charlotte. X-ray diagnosis, X-ray and radium therapy.

MARRIED

Dr. James Pettigrew Bunn, Jr., of Rocky Mount, North Carolina, and Miss Margaret Elizabeth Smith, of Heathsville, Virginia, were marriade on February 28th.

Dr. Albert Reinhold Hunt, Wayne, Pennsylvania, and Miss Ann Griswold Lillard, of Orange, Virginia, were married on March 14th.

Miss Edythe Virginia Frayser, Lake Worth, Fla., to Dr. Weldon Roger Fain Saturday, March 14th, at Bennettsville, S. C. Dr. and Mrs. Fain will reside at 61 McNair Loop, Honeycut Place, Fayetteville, N. C.

Dr. James Baker Twyman, Charlottesville, Va., and Miss Bess Dariotas, of Portland, Oreg., were married March 27th, in Dwight Chapel, Yale University.

Dr. William Quinn, of Cressfield, Md., was best man. The ushers were Dr. Robert Montgomery Bird, of Charlottesville; Dr. Henry Ecker, of University and New York; Dr. Henry Merriman and Dr. Branch Craig, of New Haven.

Mrs. Twyman was graduated from Reed College and the Yale University School of Nursing. Dr. Twyman attended the Episcopal High School, the University of Virginia and the University of Virginia Medical School. He is at present completing his internship at the New Haven Hospital.

DIED

Dr. Joseph Benjamin Bailey, 72, Keysville, Va., died April 6th while making a call.

Dr. Bailey was born in Chesterfield County. He attended old Richmond College, was graduated from the Medical College of Virginia and practiced in 1894 in Powhatan County until 1909 when he moved to Keysville.

Dr. John William Wilkins, 55, Mt. Olive, N. C., died April 3rd in a Goldsboro hospital after three weeks illness of pneumonia and uremic poisoning.

Dr. Wilkins was attending a medical lecture in Kinston when stricken with the chill which was the beginning of his last illness.

Dr. Wilbur Curtis Hunsucker, 31, of Bennettsville, S. C., died suddenly, presumably of a heart attack on April 2nd. Dr. Hunsucker was an accomplished young surgeon, associated in practice with Dr. Douglas Jennings. Attendants on the meeting of the Tri-State Medical Association held at Greenville in late February will remember Dr. Hunsucker's active participation.

Dr. Frank E. Booker, a prominent physician of Halifax County, Va., died March 26th at his home after an illness of several years. Dr. Booker was graduated from the Medical College of Virginia in 1898, and since that time had been in active practice in the County of Halifax.

Dr. Moses C. Sycle, 63, long a physician of Richmond, died suddenly on March 24th at his home, 106 West Grace Street, as the result of a heart attack. Interment in the Hebrew Cemetery was private.

Some years ago Dr. Sycle was forced to give up the active practice of his profession on account of illness, but later was able to resume his duties.

During the World War he served as a captain in the Medical Corps of the Army.

OUR MEDICAL SCHOOLS

Duke

At the beginning of the winter quarter, there were 247 medical students, 74 first year, 62 second year and 111

On November 11th, 1941, Dr. Michael Heidelberger, of the Department of Medicine of the College of Physicians and Surgeons, New York City, spoke to the Duke Medical Society on Recent Advances in the Knowledge of Complement and its Function.

The following have addressed the staff and students: On December 10th, 1941, Dr. J. M. McIntosh, Professor of Public Health, University of Glasgow, Scotland, on The Medical Student in War Time; on January 14th, 1942, Mrs. Mary P. Diaz, of Puerto Rico, on Occupational Therapy in Puerto Rico; on February 11th, 1942, Professor Ralph Linton, Professor of Anthropology at Columbia University, New York City, on Culture in the Normal Personality.

Dr. R. W. Graves, Assistant Professor of Neurology, has been appointed as one of the Army Consultants on Meningitis.

Dr. J. M. Ruffin, Associate Professor of Medicine, has been appointed as one of the Army Consultants on Tropical Diseases.

University of Virginia

Motion pictures from the Lederle Film Library were shown in the Amphitheatre of the University of Virginia Medical School on February 23rd. The films shown were Pernicious Anemia, Pneumonia—Diagnosis and Treatment, and Post-Encephalitic Parkinsonism.

On February 24th Dr. Gayle Crutchfield presented a paper at the meeting of the Tri-State Medical Association in Greenville, S. C. His subject was Lesions of the Intervertebral Disc, with Particular Reference to their Atypical Manifestations. On March 2nd he spoke before the Roanoke Academy of Medicine on Diagnosis and Treatment of Lesions of the Intervertebral Disc.

Dr. Edwin P. Lehman spoke before the Institute of the Virginia Cancer Foundation at its meeting in Roanoke, on March 2nd. His subject was The Incurable Cancer Patient in Virginia.

The Virginia Urological Society held its annual meeting at the University of Virginia Hospital on March 5th. The following members of the Hospital Staff presented papers before the meeting: Dr. Charles L. Prince, on the subject, Unusual Neoplasms of the Genito-Urinary Tract; Dr. Edgar W. Kirby, Jr., on Results of Resection on the Small Prostrate; Dr. Bruno Barelare, Jr., on Experimental Surgery of the Kidney: A New Method of Nephrotomy Closure; Dr .Leon R. Culbertson, on the subject, Spontaneous Perinephric Hemorrhage; Dr. Charles L. Prince, on Carcinoma of the Prostrate; Dr. Samuel A. Vest, on Transplantation of the Ureters. There was also a presentation of unusual cases by Dr. Vest and Staff. Dr. Linwood D. Keyser, President of the Society, spoke before the meeting on Hormone Treatment of the Prostrate; and Dr. William M. Coppridge, guest speaker, of Durham, N. C., addressed the Society.

On March 5th the Albemarle County Medical Society held its monthly meeting and dinner at the Farmington Country Club. Dr. William P. Herbst, of Washington, D. C., who was attending the Virginia Urological Society meeting, addressed the group.

Dr. E. P. Lehman addressed the Kanawha County (W. Va.) Medical Society, meeting at Charleston, on March 10th. His subject was Surgical Shock and Blood Substitutes.

28% LESS NICOTINE IN THE SMOKE—BUT NO REDUCTION IN SMOKING PLEASURE

WHEN improving a patient's smoking hygiene, many a physician simplifies his program by advising the regular use of Camel cigarettes—the slower-burning brand. Medical-research authorities* state, and Camel's scientific tests on hundreds of samples** confirm, that a slower-burning cigarette produces less nicotine *in the smoke.*

Nicotine, as the body of scientific research agrees, is by far the leading component of tobacco smoke having systemic potentials.

Slower-burning Camels not only offer a reduction of nicotine in the smoke but assure your patients of more mildness, coolness, and flavor. Naturally, your recommendation of Camel cigarettes helps to promote patients' cooperation.



● In recent laboratory tests, Camels showed 28% less nicotine *in the smoke itself* than the average of the 4 other largest-selling brands tested—less than in the smoke of any of them. In the same tests, Camel burned 25% SLOWER than the average of the 4 other largest-selling brands tested—slower than any of them.

**J.A.M.A., 93:1110—October 12, 1929*
Brückner, H—Die Biochemie des Tabaks, 1936

***The Military Surgeon, Vol. 89, No. 1, p. 7, July, 1941*

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CAMEL

THE CIGARETTE
OF COSTLIER TOBACCOS

Medical College of Virginia

Dr. C. C. Coleman, professor of neurological surgery, conducted a symposium on War Wounds of the Skull at a meeting of the American College of Surgeons in Atlanta, March 18th, and one at Durham, on March 23rd.

Dr. I. A. Bigger, professor of surgery, spoke recently to the Berks County (Penn.) Medical Society at Reading, on Wounds of the Larger Peripheral Arteries.

Dr. Maxwell Berry, recently of the Mayo Clinic staff, has joined the faculty of the college as associate in medicine.

Dr. Harry Walker, associate professor of medicine, attended a symposium on chemical warfare at the Kettering Laboratories of the University of Cincinnati for a week's study this month.

Drs. J. B. Youmans, Virgil P. Sydenstricker, D. W. Richards, J. M. Carlisle, Gus Tucker, G. W. Korner and Walter E. West were recent college visitors.

The college will begin its accelerated program for the session 1942-43 on July 6th. Classes will be conducted on a quarter basis, each quarter of eleven weeks, with a two weeks' vacation period between quarters, graduating students in medicine, dentistry and pharmacy in three instead of four years.

Dr. Harvey B. Haag, professor of pharmacology; Dr. Paul S. Larson, research associate in pharmacology; Dr. Ernst Fischer, associate professor of physiology; Dr. J. H. Weatherby, research associate in pharmacology; and Dr. Clair R. Spealman, associate in physiology, attended the annual meeting of the Federation of American Societies for Experimental Biology in Boston on April 1st. Dr. Haag, Dr. Weatherby and Dr. Larson took part in the program.

Dr. Rolland J. Main, professor of physiology, represented the college at a conference on nutrition, a part of a nation-wide program, at Hampton Institute on March 20th-21st.

Dr. Everett I. Evans, associate in surgery, led the panel discussion on the treatment of burns at the meeting of the American College of Surgeons in Jacksonville, on March 20th, and one at Durham on March 23rd.

A NEW AND CHEAP DETECTOR OF METAL FRAGMENTS IN WOUNDS

(Digest of Treatment, Apr.)

The instrument designed by Colonel John J. Moorhead, of the U .S. Army, was used for the first time in Tripler Hospital after the Japanese raid at Pearl Harbor on December 7th.

It consists of a radio frequency circuit mounted in a box, with a movable coil attached by a wire and inclosed in a steel finger, half an inch in diameter and 12 inches long, which is water-tight; the wire to which it is connected is covered with rubber so that it may be detached and sterilized by boiling. As the indicator approaches a piece of metal there is a deflection on a milliammeter. One knob of the instrument adjusts for iron fragments, another for other metals.

The indicator is passed above and around the wound in two planes at right angles to each other. At the points of greatest deflection marks are made on the flesh. The projection of these points indicates the position of the metal fragment. If this is not sufficient the indicator may be introduced directly into the wound, even in lung, brain or abdomen.

The instrument cuts the time needed to remove the fragments to a mere fraction of that formerly required. It is cheap to construct and operate, is easily portable. The box is 1x1x2 feet and weighs 10 pounds.

BOOKS

ESSENTIALS of ENDOCRINOLOGY, by Arthur Grollman, M.D., Associate Professor of Pharmacology and Experimental Therapeutics, Johns Hopkins University. *J. B. Lippincott Company,* Philadelphia, $7.00.

(Dr. Grollman has since joined the faculty of the Bowman Gray Medical School of Wake Forest College at Winston-Salem.)

The author undertakes to bring together the essentials of present knowledge of the hormones, in a not-too technical form. He believes that this knowledge is as susceptible of lucid presentation as is any other branch of science and he goes on to substantiate his belief.

Scope, history, nature, origin, methods of study, clinical uses, availability—all these are well covered.

There are chapters on the hypophysis, the pineal body, the thyroid, the parathyroids, the thymus, the islet tissue of the pancreas, the adrenals, male and female organs of reproduction, and hormones derived from nonendocrine organs.

Each of these chapters has sections giving anatomy, embryology, physiology (normal and perverted), clinical uses if any, effects of removal, and references. There is much on the interrelationship of the various gland substances.

A brilliant and complete setting forth of the essentials of what is known on the important subject of endocrinology.

RABIES, Leslie T. Webster, M. D., The Rockefeller Institute for Medical Research, New York. *The Macmillan Company,* 60 Fifth Ave., New York City. 1942. $1.75

For many years, perhaps ever since Pasteur learned how to prevent rabies, just such a book as this has been needed. Those needing the book most are (1) those who "don't believe in hydrophobia", and (2) those morbidly afraid of the disease. Every lay editor, every mayor, every county commissioner, every policeman and every constable should be obliged to buy a copy and read it.

NEPHRITIS, by Leopold Lichtwitz, M.D., Chief of the Medical Division of the Montifiore Hospital; Clinical Professor of Medicine, Columbia University. 14 chapters, 344 pages, 120 illustrations and tables, bibliography, index. *Grune & Stratton,* 443 Fourth Ave., New York. $5.50.

Present knowledge of pathology, diagnosis, prognosis and treatment of non-surgical renal diseases is presented by one of those best qualified to write on this subject.

The author describes a method of learning the functional capacity of the kidneys which may be applied rapidly by every physician. He tells us

how to learn the intake:output ratio. Well does he say that albuminuria does not necessarily mean kidney disease and that absence of albumin from the urine is no proof of kidney health. Cast and cylindroid formation is accounted for. The chapter on edema is clear and helpful. The subjects the blood in Bright's disease, uremia, regulation of blood pressure are treated of from the viewpoint of practicality. The chapters on focal nephritis, nephrosis and renal disease of pregnancy are free from the obscurities so commonly attached to the discussion of those subjects. An excellent monograph of every-day usefulness.

THE 1941 YEAR BOOK OF NEUROLOGY, PSYCHIATRY AND ENDOCRINOLOGY, edited by HANS H. REESE, M.D., Professor of Neurology and Psychiatry, University of Wisconsin Medical School; NOLAN D. C. LEWIS, M.D., Director, New York State Psychiatric Institute and Hospital; Professor of Psychiatry, Columbia University; and ELMER L. SEVRINGHAUS, M.D., Professor of Medicine, University of Wisconsin Medical School. *The Year Book Publishers, Inc.*, 304 S. Dearborn St. ,Chicago. $3.00.

Some 200 practical curative measures are described. Among these are the use of magnesium sulphate for preventing trauma in shock treatments, lobectomy for mental disease, advances in treating meningococcic meningitis and the value of stilbestrol. About the same number of "specific" diagnostic procedures are offered the reader. The editor's job in selection and in comment is well done.

THE HORSES OF THE SUN, by DR. KATHRYN M. WHITTEN, 314 pages, cloth binding. *Meador Publishing Company*, 324 Newberry Street, Boston. $2.00.

The publishers say a good deal about a poignantly moving story, unparalleled brutality, corruption in certain medical circles, rocketing to totalitarian authority, and a woman surgeon naïve enough to believe in the final might *(sic)* of decency over degradation."

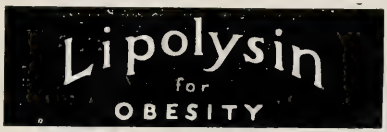
Naïve indeed is the author's version of many facts of natural history, and other history; and her conception of human credulity.

While the doctor-author is still a nurse she is employed by "Dr. Elwood Branning of Collingswood, Georgia." There she finds fearful and wonderful things: that another doctor's colored man "had been with him all his life; and all he got was rations for his family and something to wear, second-hand at that"; that negro servants were whipped *ad lib.*; that the doctors from round-about who brought patients to the hospital "were unshaven, hands and clothing soiled, collarless and with tobacco juice running down their chins;" that when she and Dr. Brannan went 50 miles to see the bank president's son after a railway accident—although another passage records that three ambulances were available, which might have brought the patient to the hospital—she found "25 or 30 women . . . all dipping snuff and spitting into the fireplace;" no stove in the house, yet a bathtub, but it full of dirty linen; a bowl black and grimy; bacon rinds on the floor; and that when she broke the news to the mother that her son had "passed away" the mother only exclaimed "shore nuff," without leaving her snuff or her seat at the fireplace!

There's plenty more just as sickening, just as false, just as ignorant, just as vicious. One wonders if the author ever heard of Crawford W. Long, or that Georgia doctors were the most enthusiastic in the Nation in accepting and practicing preventive inoculation!

The nurse drove through "endless cotton fields and sugar plantations." The fact is Georgia produces no sugar, probably never produced any, certainly not (World's Almanac) for the past 20 years.

She saw a Negro sawing off a dead man's legs to make him fit into too-short coffin. The fact is a Negro would rather cut his own or another's throat than offer any indignity to the dead, holding the dead in much more reverence than the living—wherein his ideas are in close agreement with those of most of the churches.



Method Now Prescribed . .

stimulates oxidation processes that "burn up" fat

Dysfunctioning endocrine glands disturb the equilibrium of cell metabolism, often resulting in gross deposits of fatty tissue about the body.

Lipolysin introduces a regulative and corrective influence into this imbalance. It aids in stimulating internal processes to a normal level. Fat oxidation is speeded up with a resulting reduction of obesity.

NON-TOXIC

Lipolysin contains no dinitrophenol; is non-toxic.

This preparation provides the potentially active hormones of Thyroid, Pituitary (anterior lobe), Thymus, in addition to Ovary and Testicle in respective preparations.

Send For Samples

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25 West Broadway, New York, N. Y.

Please send me samples of Lipolysin (male ( )); (female ( )), for clinical trial.

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After seeing how little of truth there is in the author's representation of conditions in a section with which one is well acquainted, no credence is placed in the tall tales about the crookedness of surgeons in the Middle West.

There may be some truth in the book. It is mostly a pretty even mixture of ignorance, recklessness and malice, containing no evidence of any regard for veracity—and all very poorly written.

A TEXTBOOK OF SURGERY by American Authors: Edited by FREDERICK CHRISTOPHER, B.S., M.D., F.A.C.S., Associate Professor of Surgery, Northwestern University Medical School; Chief Surgeon, Evanston (Illinois) Hospital. Third edition, completely revised and reset. 1764 pages with 1538 illustrations on 771 figures. *W. B. Saunders Company,* Philadelphia and London, 1942. $10.00.

The two previous editions were accorded enthusiastic welcome. Dr. Christopher tells us that war injuries have assumed so great an importance as to require an entirely new section. Five of the contributors to the second edition have been lost by death, one of these Dr. Dean Lewis. One hundred and eighty surgeons and a half-dozen physicians have made this book. Every article is written by one chosen for his proved superiority in a certain field. Among these are Conwell, of Birmingham; DeBakey, of New Orleans; Stephens Graham, of Richmond; Hart, of Durham; Holder, of Memphis; Rankin, of Lexington; and Vinson, of Richmond. The result is an astonishingly complete treatise covering the whole subject of general surgery in one volume.



MINERALS IN NUTRITION, by ZOLTON T. WIRTSCHAFTER, M. D., Clinician in Charge, Clinic for Diabetes, Department of Medicine, Mount Sinai Hospital, Cleveland, Clinical Instructor in Medicine, School of Medicine, Western Reserve University, Cleveland. *Reinhold Publishing Corporation,* 330 West 42nd Street, New York City. 1942. $1.75.

Few of us think of water as a mineral, but so it is. This mineral, along with those we always think of as important in the animal economy—sodium, calcium, iron, iodine, phosphorus, sulphur—are given proper consideration; and, in addition, the reader is informed on the important health bearings of magnesium, copper, aluminum, arsenic, manganese, bromine, zinc, fluorine and some others.

A valuable book of condensed important information.

SHOCK TREATMENT IN PSYCHIATRY, by LUCIE JESSNER, PH.D., M. D. Graduate Assistant in Psychiatry, Mass. General Hospital; Assistant in Psychiatry, Beth-Israel Hospital, Boston; and V. GERARD RYAN, M. D., Assistant in Psychiatry, Harvard Medical School; with introduction by HARRY C. SOLOMON, M. D., Clinical Professor of Psychiatry, Harvard Medical School; Chief of Therapeutic Research, Boston Psychopathic Hospital. *Grune & Straton, Inc.,* publishers, 443 Fourth Avenue, New York, $3.50.

This is a detailed survey of the three methods of Shock Treatment: Insulin, Metrazol, and Electric Current. Shock treatment has appeared as a light in a very dark place. It has not measured up to the expectations of its more enthusiastic advocates. It seems that the treatment by electric current is by far the best of the three, and successful in a large proportion of cases otherwise hopeless of cure.

THE 1941 YEAR BOOK OF GENERAL THERAPEUTICS, Edited by OSCAR W. BETHEA, Ph.M., M.D., F.A.C.P., Professor of Clinical Medicine, Tulane University School of Medicine. *The Year Book Publishers,* 304 S. Dearborn St., Chicago. $3.00.

A total of 232 measures, applicable to 131 disease conditions, brought up to date in one volume! New prescriptions, preparations, technics, office and bedside methods, tests, instruments and devices, or improved ways of carrying out measures not so new.

Drug therapy—the newest treatment of endoparasites, antacids, a review of all aspects of sulfonamide therapy, details of special forms of therapy as hormone treatment, vitamin-B-complex therapy and vaccines.

The field of therapeutics of today is covered in a way truly remarkable. Every general doctor should have a copy.

NO SPLINT, CAST, OR TIGHT BANDAGE FOR ELBOW FRACTURE

(A. A. Neuwirth, Major, M. C., U. S. Army, in *Jour. A. M. A.*, March 21st.)

Fracture or fractures in the vicinity of the elbow joint were maintained flexed by a simple triangular bandage suspended from the neck. Movement of forearm, arm and elbow was encouraged as soon as possible, in keeping with painful limits. The nonfixation treatment permits close observation of the condition of the joint and early treatment of any untoward symptoms and complications. . . .

Motion of hand, finegrs, forearm and wrist, as soon as possible, produced better functional results. . . . It is the voluntary, active movement of the patient which constitutes the major element in recovery. The doctor cannot hasten matters by forcible passive motion or stretching under anesthesia . . .

Major Neuwirth concludes, that the nonfixing type of treatment in fractures of the elbow may be applied in all cases, children and adults, with profit and with greater restoration of normal function. This method should be the rule, with fixation and splinting the exception.

SUPPURATIVE TENOSYNOVITIS OF THE HAND

(J. H. Garlock, New York, in *Jl. Mt. Sinai Hosp.*, Jan.-Feb.)

If the disease is less than 24 hours old, the sheath is aspirated under aseptic precautions and as much material as possible is removed. Smears and cultures are made to quickly identify the organism. Sulfonamide therapy, preferably intravenous, is immediately instituted. If tension and swelling is only moderate, no operation is done. Instead, the finger is immobilized in partial flexion, the position of rest. Wet dressings probably make for the patient's comfort. If there is great swelling of the finger and increased tension within the sheath, lateral incisions are made in a bloodless field, with multiple small incisions in the tendon sheath. A light dressing is applied, the finger immobilized on a sterile metal splint in partial flexion and the hand and forearm wrapped in sterile towels. The dressings should not be disturbed for three or four days. During this period, sulfonamide therapy is continued. At the first dressing wounds are dry and firm; healing takes place quickly. Because of the absence of pain, early effective active motion may be started, return of function is rapid.

In five cases operation was performed in three. A hemolytic streptococcus was cultured in four cases and a staphylococcus aureus in one. In the four patients infected with the streptococcus, there was return of complete function. In the fifth patient, there is some limitation of flexion, but the finger is serviceable.

THE TREATMENT OF VINCENT'S INFECTION WITH FUADIN.

(D. C. Smith, Charlottesville, *in Sou. Med. Jl.*, Mar.)

Dental abnormalities should be permanently corrected, and a balanced menu, and 25-50 mg. of cevitamic acid t.i.d.; and fuadin in 5-c.c. doses of the 6.3% solution in transmuscularly daily.

The clinical manifestations of Vincent's infection disappear promptly following its use and the curative effect is more complete and permanent than after the use of other drugs. In the average case six injections are required, in the most obstinate 12-15. The first six injections are given daily, then every other day to both adults and children.

All other predisposing and associated causative factors should be corrected.

ASAC

15%, by volume Alcohol

Each fl. oz. contains:

Sodium Salicylate, U. S. P. Powder.....40 grains
Sodium Bromide, U. S. P. Granular.....20 grains
Caffeine, U. S. P..... 4 grains

ANALGESIC, ANTIPYRETIC AND SEDATIVE.

Average Dosage

Two to four teaspoonfuls in one to three ounces of water as prescribed by the physician.

How Supplied

In Pints, Five Pints and Gallons to Physicians and Druggists.

Burwell & Dunn ompany

Manufacturing Pharmacists
Established in 1887

CHARLOTTE, N. C.



DESOXYCORTICOSTERONE ACETATE AND SODIUM IN ADDISON'S DISEASE

(T. H. McGavack, New York City, in *New England Jl. of Medicine*, April 2nd)

The patient with Addison's disease can be maintained in good health by the judicious use of desoxycorticosterone acetate and the simultaneous regulation of sodium and potassium intake. Good result is indicated by a slow, steady gain in weight or a maintenance of normal weight once attained, a return of blood pressure to normal and its fixation there.

In no case have I seen hypertension or edema whose onset was not preceded by rather sudden increase in the ratio between the transverse diameter of the heart and the transverse diameter of the chest.

Signs of overdosage with d. a. include a sudden gain in weight, hypertension, a cardiac-thoracic ratio above 0.50, edema of any part of the body and a feeling of malaise not unlike that prior to treatment.

Patients do best when the daily intake of sodium is varied between 2.3 and 9.0 gm. and that of d. a. of from 5 to 20 mg. The normal range of sodium intake is 3 to 6 gm., with this 7.5 to 15.0 mg. of d. a. can be given daily over long periods.

Patients with Addison's disease can be safely and satisfactorily treated with d. a. if attention is paid to the usual criteria of well being, regulation of the dosage of drug and intake of sodium.

TREATMENT OF TONSILLITIS IN RECRUITS

Neville Young, Manchester, England, in *Med. Press & Circular*,

Steam inhalations, warm, alkaline, mild gargles, and analgesics are comforting . Often semi-solids are more readily swallowed than liquids.

It is best not to prescribe sulfonamides at once, unless the patient is at least moderately ill, for a) it is probably good for him to develop some natural immunity, b) it distorts the clinical picture and may mask physical signs, c) toxic reactions may occur, especially in repeated or prolonged courses. When the drug is given it should be given systematically and in adequate amount. An active blood concentration should be obtained at once and be maintained.

Vincent's Angina is a clinical entity and highly communicable. But 1) the organisms can be found in 90% of all mouths, 2) they can often be recovered in large numbers from lesions known to be caused by another disease, 3) it is difficult to transmit the disease deliberately to a healthy mouth.

Routine treatment: Segregation of patients and their eating tools, and toilet requisites; two-hourly hydrogen peroxide mouth washes; four-hourly painting of ulcers with liq. arsen., vin. ipecac and glycerin in equal parts; or alternatively with 10% chromic acid solution (to be washed away in 2 minutes lest the dental enamel be eroded). Because of the uncertainty of the need for them, nicotinic acid (250 mg. per day by mouth), ascorbic acid (0.5 Gm. t.i.d. for 48 hours intravenously), or intravenous neoarsphenamine (0.3 Gm. on the 1st day, then 0.45 Gm. on 3rd and 6th day), are reserved for severe cases. Drastic dental or surgical treatment is contraindicated until the infection is under control.

Agranulocytic Angina should be considered in every case of severe sore throat and it is liable to occur in persons taking sulfonamides who have an idiosyncrasy. The only curative treatment, and even this is of doubtful value, is the intramuscular injection of pentnucleotide, 10-40 c.c. per day. Detection of the disease is easy when it is suspected, the white cell count being usually less than 2,000.

ELECTRIC TEST DIFFERENTIATES ORGANIC FROM OTHER KINDS BLINDNESS

(F. Lemere, in *Jl. A. M. A.*, March 14th)

Recording the electrical activity of the brain, is a reliable objective test of true as opposed to malingering or hysterical blindness.

It is explained that the most prominent brain waves are the alpha waves with an approximate rhythm of 8 per second. These waves appear on the electroencephalograph only with the eyes shut, as they arise almost entirely from the visual cortex and are broken up when the subject looks at an object.

A uniform field of light or dark, or even a field containing indefinite outlines usually does not interrupt the alpha rhythm. It requires a definite visual pattern to break the alpha rhythm. If a blind or partially blind subject attempt to look at an object and the alpha waves persist, there is not enough vision left to be of practical value to the patient. But if a person is asked to open his eyes and look around and the alpha waves stop, one can conclude that there is enough vision left to distinguish objects at least, and one can with reasonable safety make a diagnosis of malingering or hysterical blindness.

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When prostatic pain is very severe, sedatives are often necessary. The barbiturates usually suffice, but occasionally it is necessary to give codeine, pantopon, or morphine. When there is pain in the region of the prostate, or during micturition, the patient should be given a soothing prescription, such as Kirwin's mixture:

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Tinct. hyoscyami.....Ounces I
Tinct. opii camphorata.....Ounces I
Elix. saw palmetto & santalwood.....Ounces IV
Sig: Drams II (8 c.c.) q. 4 hours

Spices and alcohol should be omitted from the diet and constipation prevented. When there is marked vesical irritation limit or omit certain foods which are irritating to the bladder, such as asparagus, carrots, tomatoes, berries.

Relief may often be obtained by hot sitz baths, hot rectal irrigations, diathermy, or radiothermy.

Occasionally a prostate becomes so infected that no amount of treatment by these methods will effect a cure. Total prostatectomy is then indicated.

Benign hypertrophy of the prostate gland occurs in from one-third to one-fifth of all men over 50 years of age.—*Lowsley*.

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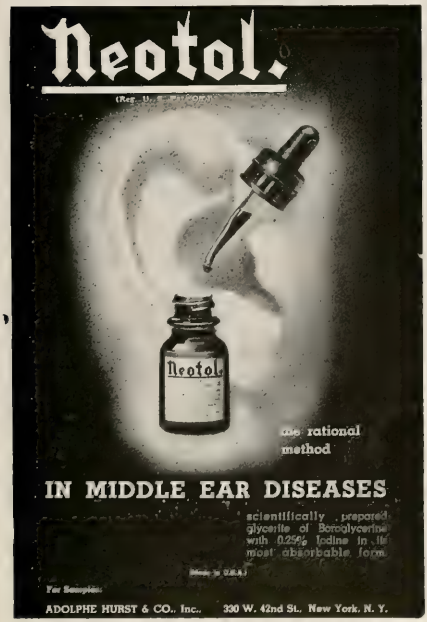


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AND SEEK A FEW MOMENTS OF REPOSE. Visit the new Solomon R. Guggenheim Collection of Non-objective Paintings. Open to the public daily except Monday. Hours 10 a. m. to 6 p. m., Sundays 12 to 6 p. m., at 24 East 54th Street, right off Fifth Avenue. The Non-objective picture stands by itself as an entirely free creation out of the intuitive feeling of space and the vital joy in the rhythmic essence of balance. Doctors may wonder what this kind of art has to offer them; all we can say is go and see at least a representative part of the 726 pictures listed in the catalogue.

LISTEN TO WHAT SOPHIE TUCKER has to tell GEORGE JESSEL about Vitamins. They are holding forth at the Broadhurst Theatre, 235 West 44th Street, in an American Musical Comedy called *High Kickers*. The play brings up visions of the past, even to the old-time curtain that used to grace our village theatre. Candy is sold in the aisles. The only doctor in the cast wears a frock and laments the fact that he can't do anything. Just like any specialist who is called in when the patient is ready for the obituary column. Death is soon forgotten in the many scenes of laughter which continues right through to the final curtain. There is only one Sophie Tucker and one George Jessel. Worth a stop-over in New York anytime.

ARRANGE TO ATTEND ONE PERFORMANCE, at least, at the Radio City Music Hall, in Radio City. Besides the showing of some excellent photoplay, one may have the pleasure of witnessing the precision dancers who comprise the internationally known Rockettes and the wonderful formations of the Music Hall Corps de Ballet under the direction of Miss Florence Rogge. A permanent staff of 536 persons operate the place. Its stage has space to show presentations employing as many as 300 performers. The symphony orchestra of seventy-five men is the largest permanent theatre unit in the world, according to Irving W. Cahn, of the editorial staff of *The Host*. At least 50,000,0000 persons have attended performances.

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CHUCKLES

"And why is Ben wearing the big plaid vest?"

"Haven't you heard? The doctor told him to keep a check on his stomach."—*Med. World.*

"So your engagement to that rich deb is broken off. I thought you said she doted on you?"

"She did. Her father was the antidote."—*Metal Edge.*

Doctor: "Drink water freely and it will keep you from becoming stiff in the joints."

Patient: "But, Doctor, some of the joints don't serve water."

They were discussing a certain politician. "Well," summed up the smoke-room philosopher, "I'll tell you this about him. He might have typhoid, and recover; he might have pneumonia, and recover; he might have yellow fever, and recover; but—if he ever had a lockjaw, by gad, he'd burst!"—*Med. Record.*

Two phychoanalysts meet. Said one to the other: "You feel fine. How do I feel?"

Foreman: "When will your father's leg be well so he can come back to work?"

Son: "Oh, not for a long time yet."

Foreman: "Why?"

Son: " 'Cause compensation's set in."

Betty (just engaged): "Doris, do you know what it feels like to be in love, to sit next to the man you adore, and feel your innermost soul vibrate?"

Doris: "Sure, I do. Every time Joe takes me out on his motorbike."—*Tile and Till.*

The modern home is one in which a switch regulates everything but the children.—*Ibid.*

TONSILS OUT AS ENCORE

An actor decided to give up his career and become a doctor, and in a short while he was achieving a great deal of success.

One day he was performing an operation for appendicitis, and, as usual, the operating theatre was filled with students.

The operation was performed so successfully that, at the end, the students broke into loud applause.

The old actor spirit returned, and the surgeon, after bowing his appreciation, hurried back—and removed the patient's tonsils as an encore.—*Canadian Doctor.*

He sat down at a table at a smart restaurant and tied his napkin around his neck. The manager, scandalized, called the waiter and said to him, "Try to make that man understand as tactfully as possible that it isn't done."

Waiter (seriously to customer): "Shave or haircut, sir?"

"Suppose the enemy shot off one of your ears, what would happen then?"

"I couldn't hear so good."

"Well, suppose the enemy shot off both of your ears, what then?"

"I couldn't see."

"And why wouldn't you be able to see?"

"Because this too-big hat would slip down over my eyes."

"They tell me that you have a model husband, Miranda."

"Yes, ma'am. But he ain't no workin' model. He's jest a blue print."

A firm, chewy apple, taken in generous bites that require considerable chewing, is more efficient than your toothbrush in cleansing your entire mouth, Dr. Holmes T. Knighton, of the University of Louisville, Ky., told the American Dental Association.

Would you say the patients in a proctologist's office on a Saturday night are week- or weak-end visitors?—*Med. Record.*

The toastmaster rose to introduce the speaker, an elderly medical professor, renowned for his erudition.

"Gentlemen, you've been giving your attention to a turkey stuffed with sage. Now will you give your attention to a sage stuffed with turkey?"

Laborer's wife (to village chemist): "You'll be sure to write plain on the bottles which is for the 'orse and which is for me 'usband. I don't want nothin' to 'appen to the 'orse.—*Canadian Doctor.*

Why should a man troubled with gout make his will?
Because he will then have his legatees.—*Tile and Till.*

A sheep has been discovered in the Himalayas which is able to run 40 miles an hour. That's about the only kind of lamb that could follow Mary nowadays.—*Ibid.*

"Pardon me, may I cut in?" asked the young surgeon as the operation began.

The sailor was recounting his experience to a dear old lady.

Old Lady: "What rank did you hold?"

Sailor: "Ship's optician, lady."

Old Lady: "I didn't know there was such a rank. What did you do?"

Sailor: "I scraped the eyes out of the potatoes."—*The Chaser.*

Binks: "You don't seem to think very much of Bill."

Skinks: "Say, if Bill had to have his conscience taken out he wouldn't even need a local anesthetic."—*The Broadcaster.*

LEAVES—From a Doctor's Diary.

Several months ago prominent Mr. Paget, reformer, came with lymphogranuloma inguinale. Five months of Frei antigen, then extirpation by surgical diathermy, cured the dignified gentleman. Yesterday, in my office, he said: "I received your bill. Quite reasonable. Any time you pass by, stop in and get your check." I made a special trip to pass by. The girl at the desk asked if I were the doctor, and then said Mr. Paget was not in. I pointed to his hat on the rack. "You think he's got only one hat?" I pointed to the overcoat. "He's got six of them." I told her I saw his wife waiting for him to go to lunch. "You think he has only one——? Never mind. He's not in to you." Surgeon Gordon, who did the extirpation, informed me that he was not paid either.

The disorientation and maniacal excitement of Elizabeth Leathers was merely avitaminosis. Vitamin therapy made a different woman of her.

Sulfathiazole ointment cured Bill Magee's ringworm, and I am a "wonder"; but it caused toxic symptoms in Lester Bethel and I am a "menace!"

PAPERS PUBLISH "NEWS"—NOT FACTS.

(Mr Linton Wells, in *Proc. 35th Annual Convention of Association of Life Insurance Presidents.* Dec. 11-12)

Twenty-six years ago, the late Floyd Gibbons and the late Bill Shepherd were down in Mexico covering a revolution. After this day's battle we began to prepare our dispatches to our respective press associations.

I said to Gibbons, "Floyd, what is your casualty list today?"

He said, "What's yours?", being very cautious.

I said, "Well, I think 50 killed and 150 wounded is pretty small, so I am going to make it 100 killed and 250 wounded."

He said, "There is no story. My casualty list is going to be 500 killed and 1,500 wounded." I agreed. We turned to Shepherd, who was pounding away busily on his old Corona and said, "Bill, what's your casualty list today?"

Shepherd said, "2,000 killed and 5,000 wounded."

We protested, "Why, there are no more people than that in this entire battle."

Still without looking up from his typewriter, Shepherd said: "Listen, you guys, my outfit is interested in news, not facts."

LEAVES—From a Doctor's Diary.

She threatened to scream if the young blade kissed her. He reminded her that they were in the front room, and if she screamed people in the street would hear her. "All right, then," she said, "Let's go in the back room."

An 8-year-old boy had pain in the epigastric and paraumbilical regions, diagnosed appendicitis. Found to be peptic ulcer—the first case I had encountered in so young a child.

Testosterone propionate injected into castrated Dave Finger brought back a crop of hair to a head that had been completely naked. Now his cousin, hairless as a golf ball, wants the same stuff injected in him, provided that "you let me keep my testicles."

Injection of testosterone propionate completely allayed the senile pruritus of 85-year-old Alexander Warner.

Mild infection of the nasopharynx. Thrombosis of the cranial venous sinuses. Death. "Did he hiccough?" student Lazar asked the nurse. "No? Well, that's a good sign."

The pigmentation of the skin of 78-year-old Emmet Chase, at first diagnosed as Addison's disease, proved to be hyperthyroidism, though the basal metabolism and blood cholesterol did not show significant changes. He had a coarse tremor, precordial distress and dyspnea. His wife, a few years younger, asked for the best medicine for her cough, no matter what the cost. "Don't you prescribe anything for him that costs too much!" she warned me. Last week while I was in a delicatessen store the same woman came in and asked for some cheese. The clerk asked, "What kind, Mrs. Chase, for your husband, or something better?"

"Mr. Gootman talking. Come over right away and look at my boycheek." I asked what a boycheek is. "You know what a boy is? Well, a boy is a boy, and a boycheek is a boycheek. See?" It proved to be a case of bilateral epididymitis in a boy of ten, after untreated mumps. The father had thought the swelling of the face was due to toothache. Anyhow, his little son will never be a father of boycheeks.

For months Alice has been starving herself because she read that malnutrition favors the birth of a male. Today she entered the hospital on the verge of acidosis and was delivered of a fibroma.

The morals of Kate are on a par with her mentality. Kate, pregnant, needed a transfusion. Good Dr. Hawes, whose greatest joy in life is talking, opened up on erythroblastosis fetalis. Kate said nothing because she didn't know what he was talking about. But when he said "There is something in the blood of the baby which is inherited from the father, and lacking in the mother," she pricked up her ears and then interrupted, "How do you know who the father is? If you do, you're a wonder."

TREATMENT OF EYES AFTER EXPOSURE TO LEWISITE AND MUSTARD

The Chemical Warfare Service now recommends a single instillation in the eyes of a 0.5% solution of hydrogen peroxide as soon as possible after contamination with Lewisite. This solution may be prepared by diluting one part of a 2% solution with three parts of water, or one part of a 3% solution with five parts of water. The solution usually found in drugstores is the U.S.P. strength of 2.5 to 3.5% hydrogen peroxide. A 0.5% solution of potassium permanganate has also been found effective as an eye instillation following exposure to Lewisite.

In planning decontamination stations, the Medical Division, Office of Civilian Defense, recommends that provision be made near the entrance of the second or shower room for the irrigation of the eyes of contaminated persons. Delay until the casualty reaches the dressing room will result in more serious injury to eyes which have been contaminated with mustard or Lewisite.

It would be difficult to estimate the time and money wasted and the misery caused by worthless medical writings. They are particularly disconcerting to the student who finds the subject complex without the addition of red herring. Oh, the time and materials used up in disproving light-hearted observations whose strongest foundation is speculation, the only requisities for the recording of which seems to be a pen which flows freely under the direction of a mind that goes into freewheeling at the slightest provocation.

—Editorial in *Cin. Jl. of Med.*

Get patients up.—Data on 370 patients subjected to appendectomy and on 66 having had other operations appears to prove that nothing harmful is likely to happen to these patients if they get out of bed on the day after operation. Not a case with pulmonary complications, dehiscence, postoperative hernia, thrombophlebitis or death.

Sulfacetimide, a new sulfonamide, has been under clinical trial in my hands for the past year, and has been found to be more generally effective as a urinary antiseptic than any drug so far encountered.

—W. L. Ross, Yakima, Wash., in *NW. Med.*

First-degree heart block in the young after acute infectious diseases and in those older due to degenerative diseases, slight degrees of myocardial damage, bundle branch block require the ecg. Uncommon conditions which can be recognized only by the ecg. of no great importance.

Its use is of value in estimating the risk of major surgical procedures in those past middle age.

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JAMES M. NORTHINGTON, M. D., Editor

VOL. CIV CHARLOTTE, N. C., MAY, 1942 No. 5

What Removal of Tonsils Will and Will Not Do*

Clay W. Evatt, M. D., Charleston

IN MY MIND there is no question that the misapplication of the focal infection theory has led to the removal of myriads of innocuous tonsils and adenoids. In reviewing the problem I find that in a period from 1928 to 1931 one-third of all operations performed on a group of 40,000 cases studied were tonsillectomies.

Glover reports that 200,000 tonsillectomies were performed annually in prewar England and Wales. He reports that the operation was three times as prevalent among the well-to-do as among the poor. In this country the operation is double as many in the large-income families as in those who do not pay income tax.

There was a tendency for the operation to be performed as a routine prophylactic measure for no particular reason and with no particular result. No procedure in medicine should be done this way.

In 1924 Collins and Sydenstricker found that among children from five to fourteen years of age in the registration area there were forty deaths from anesthesia, and of these anesthetics 57 per cent were given for tonsillectomies. In 1924, of all ages, there were 474 deaths from anesthetics, 16 per cent of them given for tonsillectomies. Eighty-five deaths occur annually from tonsillectomies in children under fifteen years of age.

So the removal of tonsils is not without mortality; it is an operation not to be entered upon lightly or by the untrained, not to be advised or undertaken in the absence of positive, clear-cut indications.

To remove all tonsils as a routine prophylactic measure is foolish; the risk and the uncertain results do not warrant such wholesale bloodshed. In the last twenty years in some cities of the United States nearly fifty per cent of the children have had their tonsils removed.

When are the tonsils a menace? The bacterial flora present is of little aid in deciding whether or not the tonsils should come out. There is no laboratory test or instrument of precision which may be applied. The doctor must let his decision rest upon his own experience and on his estimate of all the factors which contribute to the well-being of the individual, and upon the experience of others as expressed in their reports.

In approaching the clinical part of the problem, one encounters numerous pitfalls which make us wonder whether the clinical and statistical studies recorded present the true picture of the problem. Various studies have been made by different methods and with different ends in view. One sadly reflects on the modus operandi of some of the large tonsil clinics, as conducted by inexperienced internes whose chief interest is to learn the tonsil operation and whose second thought is to, as quickly as possible, get their quotas of the next day's operations.

Acute and chronic infections of the pharynx do

*Presented to the 44th Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greenville, S. C., February 23rd-24th.

hinder the normal development of the child or the continued well-being of the adult. It is logical to improve the zone in which the infection originates. Enucleation of diseased tonsils removes some foci of infection, and the rapid return of health leaves us with no doubt that the tonsils were a liability and their removal a good thing.

A. D. Kaiser, in a study of a great number of children over a period of ten years, for apparently good reasons, advised tonsillectomy in 4,400 of them. But about 2,200 of the children did not submit to operation at the time and were not later operated upon.

For the group operated on the instances of sore throat were markedly decreased during the first three years following operation, and decidedly decreased during the next seven years. Similar results have been reported in other studied groups.

Bad colds occurred with about equal frequency in the two groups over the ten-year period. However, the children operated on had fewer colds during the first three years after operation.

In the same group during the three years after operation nearly twice as many of the younger children not operated on had purulent otitis media. In the older children there was very little difference. Liability to ear infections is diminished by the changing anatomy of the eustachian tube and middle ear as the child grows. Adenoid removal is certainly an advantage to the younger children.

Catarrhal otitis media which leads to impaired hearing is frequently cured by adenoidectomy. I do not see that tonsil removal will have any direct effect on ear infections.

In the three years immediately following operation 5 per cent of the group operated on had enlarged cervical glands, as against 14 per cent of those not operated on.

Those operated on had more bronchitis and pneumonia than did those not operated on. Either the lack of tonsils increased the chances of developing bronchitis and pneumonia, or those with tonsils out were naturally more susceptible and the operation not responsible.

No relationship has been shown between the incidence of tuberculosis and the tonsils, except that in tuberculous adenitis the tonsils seem to be the portal of entry and their removal may reduce the incidence of this disease.

Allergy is not favorably influenced by tonsillectomy.

The influence of tonsillectomy on rheumatic attacks is variously reported, but the influence is probably slight; however, most all observers report a lesser cardiac involvement in this group.

Chorea seems not to be influenced.

The incidence and complications of pertussis, measles, diphtheria, scarlet fever and chickenpox seem to bear no relationship to presence or absence of tonsils.

Speech defects, malshaped mouths and funnel chests are frequently seen in children whose pharynges are filled with adenoids. I do not recall having seen or treated a child with pus in the sinuses who had had the adenoids removed.

When and why should we remove the tonsils? Certainly there are cases so plain that operation should be done at the earliest feasible moment. There are cases that should certainly not be operated on at all. Then, there are cases in which good and capable men are unable to agree. The most important question is whether or not the tonsils are infected. Simply because the tonsil is large does not mean it is dangerous; indeed many tonsils appearing smaller than normal urgently need to be removed: but all cases of infection in the tonsil demand removal as soon as the patient is put in the best possible condition.

Dr. Earl Whedon reports in the *Rocky Mountain Medical Journal* on 1,510 private patients operated on in his office over a period of thirty-six years. The age limits were nine months and eighty-two years. Ninety-five per cent were done under local anesthesia. Dr. Whedon practices in a town of 8,500 and knows all his patients personally; and he says that 93 per cent of those now alive claim complete relief of throat infection, 7 per cent still subject to local infection. No abscess occurred in the years following operation. No pneumonia or lung complications occurred. The general health of the patients was improved. He feels that tonsillectomy has played an important part in lessening heart disease and rheumatism as compared with former years.

In summary there is no gainsaying that:

1. Tonsillectomy should be considered a major operation.

2. Whenever practicable the operation should be done under local anesthesia.

3. The changed mental and physical condition after the removal of diseased tonsils is of definite benefit.

4. When the tonsils or adenoids are diseased nothing will take the place of good surgery.

Discussion

Dr. Walter J. Bristow, Columbia (Read by the Secretary):

Mr. President, Members and Guests of the Tri-State Medical Association: Dr. Evatt has brought up a subject which is of perennial interest and a subject which always provokes discussion in a medical group. When I first began the practice of otolaryngology my attitude towards the tonsil question was somewhat as follows: The one to decide whether or not tonsils should be removed in a given case is the doctor who is familiar with the general physical condition of the patient under consideratiton. In chil-

dren this decision would be made by the pediatrist or the family physician. In adults the diagnostician or the family physician would decide. The otolaryngologist's job would be to remove the tonsils and *not* to decide whether or not they *should* be removed.

This attitude as outlined above has been changed in recent years. Many pediatrists now consider, and rightly so, that the lymphoid tissue in a child's throat and nasopharynx, as represented by the tonsils and adenoids, has a definite protective function. Not a few of the pediatrists have extended this idea to the point where they are reluctant to recommend tonsillectomy in children at any time. I have in mind a six-year-old child who has had six separate and distinct attacks of acute follicular tonsillitis over a period of nine months, and had been treated in each attack with one of the sulfonamides by a well known pediatrist. When the mother asked the child's doctor why he did not recommend tonsillectomy, his answer was, "Would you cut off your finger because it becomes inflamed?" This and similar attitudes on the part of the pediatrist has forced upon the otolaryngologist the duty of making a decision in a great many cases.

In the case of adults the situation has been quite different; in fact it has been almost the reverse. Very few tonsils are removed from adults because of attacks of acute tonsillitis. Mostly they are removed because it is believed that the tonsils are acting as a focus of infection. While the theory of focal infection has been greatly modified since Billings first introduced it thirty years ago, and while even this modified conception has been abandoned by some medical men, nevertheless, focal infection is the motivating idea in most tonsillectomies in adult patients. For the otolaryngologist the focal infection theory is his "Stock in Trade." I must admit that my views on this subject have been altered materially within the past few years, and many times recently I have been reluctant to tonsillectomize the patient who has been sent in by the internist for operation.

Dr. John Wyatt Davis, Jr., Lynchburg:

I would like to have Dr. Evatt discuss the incidence of poliomyelitis following tonsillectomy.

Dr. F. E. Kredel, Charleston:

Lung abscess is one of the most distressing complications that may follow tonsillectomy. Is it Dr. Evatt's opinion that local anesthesia is safer in this regard than ether?

Dr. J. M. Northington, Charlotte:

Dr. Hubert Royster certainly would enjoy being here. I tried to get him to come, but he said he couldn't make it. Those of you who attended the 1906 meeting of this Association held at White Stone, not far from here, will remember Dr. Royster. He was president that year. What brought Dr. Royster to mind just now was the essayist's conclusion that tonsillectomy should be considered a major operation. Why, Dr. Evatt, Dr. Royster has settled it that all surgery is major, "except that done by a minor surgeon."

I tried to disagree and to tell him a story about the major and minor prophets; but he squelched me by saying that tale was told on John Knox when he was a student at the University of Edinburgh 400 years ago—and I shut up.

I would like to say, on my own, that I am very much gratified to see such a radical change in recent years in the attitude of otolaryngologists as to what tonsils should come out. A good many years ago an otolaryngologist member of the faculty of a great medical school put his conception of what tonsils should come out into one sentence—"The presence of tonsils is sufficient reason for their removal." Indeed that seemed the prevailing idea. I am delighted to see that the attitude has changed so very greatly that now the otolaryngologists have to decline to remove tonsils when removal has been recommended by the internists and general practitioners. I would include pediatricians, but it seems they don't think any should come out unless by the hands of one of them.

Dr. A. A. Barron, Charlotte:

I would like to ask how many headaches Dr. Evatt has seen cured by taking out tonsils?

Dr. G. G. Dixon, Ayden:

Has the doctor made a study of a large series of people who have had their tonsils removed, as compared with similar series of those who have not, over a period of fifty years? And what is the general health of the group operated on as compared with that of those not operated on, and the general life span of the two groups? It seems to me it would be well to take a large group of people and follow them through a life-time, one or more generations, before determining whether or not the mass removal of tonsils is an advantage or a disadvantage.

Dr. George R. Wilkinson, Greenville:

During the last thirteen years I have had an opportunity to follow a group of children in the Orphanage at Clinton, S. C., fifty miles from here. The problem of taking out tonsils is ever before us. No matter how the tonsils look when the child comes there, with its comparatively limited dietary, it is not long before they are about the size of your thumb and point out toward the middle of the pharynx. We have had to establish some sort of criterion, for when you examine thirty or forty children in an afternoon and go back and forth and have a group to look over twice a year, you have got to have a formula to go by. There is not time for detailed determination for each child. We have come to this rule—it may not work in private practice but in institutional work it has been a big help—we keep a definite log on the child's days out of school. If he is sick enough to stay out of school, he is put in the infirmary, so we have a very good record. If a child has had as many as two cases of tonsillitis in a year and his tonsils look bad and glands in the neck are palpable, we have that child's tonsils taken out pronto. Unless we have clinical evidence, that is actually see the child in an attack, we leave the tonsils and see what we can do for them. As time has gone by, year in and year out, we have found that practically all of the children have to have their tonsils taken out on that basis before they get through school. With that sort of program, I certainly wouldn't say that the tonsil situation has changed much. The records show that whereas a child used to miss 21 days from school, he now misses 3¼ days in a year. No more ears run all the time. General health is improved. The amount of money spent on food is the same as 15 years ago, but the general health is improved. How much is due to tonsillectomies and how much not, I don't know. It is impossible to pick out one fact and say it changed the picture of a child's life. I am satisfied that when a child has had as many as two attacks under observation and you can feel glands in the neck, that is enough evidence to help make up your mind.

Dr. A. E. Brown, Greenville:

I am a lesser light in this situation but there is one thing Dr. Evatt didn't mention that I wish he had. If he mentioned it, I didn't hear it. I hope all the men have gone to Glory who say that a child should be so old before he has his tonsils out. It's just as foolish as to say we won't cover the house when it is leaking because we want to wait until next summer when we can get material cheaper. Still there are men who want a child to get so old before he has tonsils out, even though he keeps a draining ear and has bronchial upsets and sore throat. In my own family is a boy who is now 20 years old, who had his tonsils out one month before he was two years old. He had had septic sore throat followed by middle-ear infection. After that operation, I quit telling folks a

child had to be four years old before he had his tonsils out. Last year I heard someone say, "She is not quite seven—is she old enough?" We know medicine doesn't wait on age. We know people have nephritis at 20, yet most of us hope we won't have it until we are 60. As Dr. Evatt said, when to remove tonsils depends on the integrity and the observation of the doctor and the symptoms the patient has had and the history. I think more like Dr. Wilkinson—if you watch a child over a period of a year, durned near all of them ought to come out. If you have symptomss, don't wait until you are fifty. I was told that symptoms of abscesses and backache dated back to when I was a child and hurt my back. Now I don't have backache. I had my tonsils out five years ago. The best nose and throat man, I thought, in Greenville told me I didn't have any. I don't know why except he knew I wasn't going to sleep. I think that influenced his decision some.

DR. CLAY W. EVATT, Charleston:

I wish to thank these gentlemen for their very full discussion. The discussions really made the paper worth while. In reference to Dr. Bristow's friend using the infected finger to illustrate to the mother: I say something like this: The child has had infected tonsils quite a while. There is no question that the tonsils are putrid. If you have a finger dead and decomposing you don't leave it hanging on. What brought this up in my mind is that on the one hand men want to take out all tonsils and on the other hand some pediatricians don't want any taken out. I think the middle of the road is more sane, but there is a great deal that is not known. As time goes on we will have to keep on studying the situation.

Dr. Davis asked about poliomyelitis. About the time of the poliomyelitis epidemic in Charleston some man in Chicago claimed to cure poliomyelitis by taking out tonsils. I don't put much faith in his claim. His patients evidently had a very mild kind of poliomyelitis, different from what we had in Charleston. I am quite certain taking out tonsils would not cure poliomyelitis and I don't think it would have any influence whatsoever on the predisposition to it.

Dr. Kredel asked about lung abscesses, I haven't seen any. I don't know anything about it. By and large, I think it is much safer to do tonsillectomies under local than general anesthesia.

Dr. Barron mentioned headaches. I don't know of any headaches having been cured by removing tonsils, teeth or prostate.

Dr. Dixon said he wanted studies over a 50-year period. The nearest answer I could give to that is that the life insurance companies do not find any difference in the death rate from heart trouble in tonsillectomized and non-tonsillectomized people studied over a period of years. I think vitamins and minerals and hygienic care, the general health education that we Americans have put on, certainly since the last World War, have all together greatly benefited the children who are now becoming our adults. The draft boards tell us that men examined from the cities are much better physically than those from the country. It is just the reverse to 30 years ago. They have had better diets, vitamins, minerals, and lastly, and I think not least, removal of tonsils and adenoids play a part in that. There is no doubt about it that they are taken care of better in city centers than in neglected rural sections.

Dr. Wilkinson's studies are very worth while and coincide with the practice as I see it. I agree with him that after two or three cases of tonsillitis in a year, apparent tonsil abscesses, run-down condition, enlarged glands, whether painful or not, there is no doubt that the tonsil is a focus of infection. At the Charleston Orphanage all incoming children have their tonsils removed at that time and so far as I know in the last seven years not a case of mastoiditis has been operated at the Charleston Orphanage out of two or three hundred children. Ear infection is much less than in the general population of the city. I am glad that Dr. Wilkinson is keeping records on how many days they are out of school.

Reducing days of sickness from 21 to 3¼ is a great accomplishment, not only as to school attendance but for the increase of the child's health and physical vigor in later life.

And I especially wish to thank Dr. A. E. Brown for emphasizing the age question in tonsillectomy. There is no clock or calendar in the pharynx. Whenever the tonsils or adenoids need to be removed they should be removed.

Again I thank all of you.

CORRECTED VERSION OF CLOSING DISCUSSION OF TRI-STATE PAPER PUBLISHED IN APRIL ISSUE

G. T. TYLER, M.D., Greenville, S. C.

I thank the gentlemen for their remarks. First of all, no discussion of this subject would be complete without mention of the names of Dr. George Gray Ward and his associates at the Woman's Hospital, New York.

Inability to explore the abdomen is an objection to vaginal hysterectomy, unless you do like Dr. Heaney, of Chicago, or Dr. Babcock, of Philadelphia. Dr. Heaney explores the abdomen, or certainly the lower part of it, very effectually. Dr. Babcock reports that he has removed by morcellation, tumors as large as a 7 months' pregnancy by the vaginal route. I wouldn't want to try it. Prevention of hemorrhage is a real consideration. In my reply, I will include Dr. Bunch and Dr. Davis. Dr. Davis mentioned the fear-complex. Don't think, Doctor, that I am free from it. I have had trouble in the control of bleeding from the uterine arteries. I try to ligate these arteries before the clamps are removed. On one occasion the bleeding could not be controlled without the clamps.

Dr. Kennedy, at the Joseph Price Hospital, almost whacks out the uterus. He does it so quickly. He leaves the clamps on for 48 hours; unlocks them; and later removes them. I used this method in my case to control bleeding. The patient declined further operation; but on later examination, I found the vaginal vault well supported in the pelvis.

Infection is a real fear. I think the explanation is that we are not thorough enough in cleansing the field of operation. At the Joseph Price Hospital, gallons of cleansing fluid are used. They scrub all areas to make them as nearly sterile as possible. Some of you who have seen Dr. Kennedy operate know that he does not use gloves. Yet he has good results. Two weeks after removing the uterus, he does a perineal repair. This method requires a long stay in the hospital. Dr. Heaney's patients remain 12 days. I usually keep my patients about two weeks.

I feel that vaginal hysterectomy has an important place in properly selected cases of prolapse. In a large percentage of these patients, the results have been excellent.

THE AMERICAN CONGRESS OF PHYSICAL THERAPY will hold its 21st annual session September 9th-12th, at the Hotel William Penn, Pittsburgh, Pa. The annual instruction course will be held from 8:00 to 10:30 a. m., and from 1:00 to 2:00 p. m. on the 9th-11th, and will include a round-table discussion group from 9:00 to 10:30 a. m., the 10th. A new feature will be a demonstration showing technic from 5:00 to 6:00 p. m. All of these sessions and the seminar will be open to the members of the regular medical profession and their qualified aids. For information and program address—

American Congress of Physical Therapy,
30 North Michigan Avenue, Chicago.

Some Clinical Aspects of Brain Tumors*

Archie A. Barron, M.D., Charlotte, North Carolina
Chief of Neurologic and Psychiatric Service, Charlotte Memorial Hospital

IN THIS DAY of mechanization it may be well to stimulate our interest in the clinical interpretation and evaluation of symptoms of brain tumors. It is true that there are no infallible symptoms signalling this condition, but where the examining physician is "brain-tumor conscious" and is capable of evaluating the signs and symptoms exhibited by the patient, it is seldom necessary to wait for years, at the best, or autopsy, at the worst, for a diagnosis.

Symptoms relatively common in occurrence, undramatic in manifestation and undiagnostic when considered separately may, when properly correlated and closely appraised in the light of pathological knowledge, be sufficient for the diagnosis of brain tumor.

It is obvious that my discussion will be extremely limited. I will make some general remarks and discuss briefly a few cases. The symptomatology of brain tumor outlined in the synopsis has not been discussed *per se*. This is because I thought the approach from the angle of the analysis of a particular case would be wiser.

History of headache, vomiting, dizziness, mental changes and failing vision etc., particularly in an advanced case, is to be expected. All patients who experience convulsive seizures, especially after adult life, should be considered as brain-tumor suspects, especially if the convulsion is of a focal Jacksonian type. Hallucinations (visual, auditory, olfactory, gustatory and dreamy states) should suggest to us the possibility of a brain tumor.

There is no diagnostic headache, but the physician should concentrate upon differentiating the headache with the organic cause from the so-called "functional" headache. As Curran expresses it: "It is easy for the organically minded to make the mistake of attributing a headache to some physical finding which may be coincidental, concomitant or consecutive rather than causal—whereas for the psychologically minded it is very easy to make the mistake of attributing an organic headache to a psychogenic situation which may also be merely coincidental."

Incidentally, the organic headache often is accompanied by signs which can be objectively observed, such as an appearance of sleeplessness, whereas the "functional" headache may be substantiated only by the word of the patient. The organic headache is more likely to be influenced by certain postures—the "functional" by an unpleasant experience—real or anticipated.

There are no diagnostic mental changes. Workers who have analyzed the symptoms of verified tumors doubt that a definite relationship can be established between the frequency and type of mental changes and the biologic nature or position of the tumor.

Let us make the following outline:

1. Metastatic tumors.
2. The primary brain tumor, the glioma.
3. Primary intracranial tumors not originating from the brain tissue proper.

Metastatic Tumors

In regard to metastatic tumors it is well to remember that about one-fourth of all tumors within the skull originate from some malignancy elsewhere in the body. The usual sources are from the breast, lungs, kidneys, prostate, uterus etc. It is evident, therefore, that all patients showing signs and symptoms of an intracranial lesion should be carefully examined.

A woman, 54 years of age, was seen with symptoms of nausea, vomiting and headache. This patient had been seen some four weeks previously by a competent gastroenterologist and a radiologist. Their attention was focused on the gastrointestinal tract and they reported no pathology. Examination revealed a plethoric woman, weighing over 200 pounds and absence of left breast—amputated some 5 years previously because of cancer. Marked choking of eye grounds with moderate spastic weakness of right extremities. Further x-ray studies revealed extensive massive malignancy of both lungs, quickly explaining the cause of her symptoms and the origin of the intracranial lesion.

Another middle-aged woman, weighing over 200 pounds, was seen, in which mental symptoms were outstanding. It had been suggested that this patient be placed in a mental institution. The patient was very much agitated, restless and confused. She complained of severe headache in front and back part of head. Examination revealed an attached mass in left breast, moderate choking of both eye

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grounds, stiffness of neck and tenderness elicited on tapping of posterior occipital region. X-ray revealed massive erosion of occipital bones. The mass in the breast was malignant, thus quickly explaining the resulting intracranial lesion and all mental symptoms.

The third case is remarkable because of its rather sudden onset. It is remarkable how much pathology can exist in the brain and symptomatology be of such short duration.

A woman, 54 years of age, was seen in a semiconscious state with the history of having been sick for some 7 weeks. So far as she and her family knew she was in good health until she rather suddenly developed pain in the right side of neck and back of head and felt dizzy. Some blurring of vision occurred and it was necessary for her to be confined to bed. After a few hours she was able to get up and about with help but did not feel well. Pain in neck and back of head persisted. In a few days she had a recurrent semicomatose attack from which she recovered. These semicomatose attacks recurred at irregular intervals, gradually became more pronounced and lasted for little longer periods. When I saw her she was able to coöperate to a moderate extent. She was badly dehydrated, showed definite weakness of left sixth nerve (at times some apparent weakness of all eye muscles), moderate weakness of right extremities, eye-grounds negative, right antrum was full of pus. B.p. 115/70, spinal fluid pressure 340, total proteins 125 mg. per 100 c.c. The patient gradually grew worse and in a few days succumbed.

Autopsy revealed multiple tumors of the brain—tumors of moderate size in right frontal, left temporal, right parietal and right cerebellar lobe. Both adrenals showed a malignant tumor growth, and these were the sources of the metastatic involvement of the brain.

Gliomas

The glioma, the only primary brain tumor, constitutes 40-50% of all tumors of the brain. The majority of tumors in adults occur in the cerebrum or above the tentorium, the majority of tumors in children in the cerebellum. There are four commonly encountered types of gliomas. The glioblastoma multiforme appears almost exclusively in the cerebral hemisphere, is highly vascular and always rapidly fatal. The astrocytoma is one of the most common gliomas and is relatively benign. In adults it is usually encountered in the frontal, temporal and parietal lobes, whereas in children it occurs predominantly in the cerebellum. These tumors are prone to become cystic. Some say that a few of the astrocystic tumors, namely, the giant-cell and the cellular type grow more rapidly and have a shorter clinical course. The medulloblastoma is highly malignant, sensitive to therapeutic doses of x-ray, occurs more frequently in children, almost always exclusively in the cerebellum. The oligoglioma is a slow-growing tumor which usually arises in one of the cerebral hemispheres, has a marked tendency to undergo calcification, is not vascular and tends to undergo cystic degeneration.

Tumors in children are more often in the midline between the two cerebellar lobes, or in a cerebellar hemisphere. Because of their position, especially if in the midline, they soon obstruct the flow of the cerebro-spinal fluid from the ventricles.

Children will not complain of headache, unsteadiness, impairment of vision and nausea as quickly as adults. History of brain tumor in children will usually reveal early periodic morning vomiting and headache.

Illustrative Case

A girl, aged 10, was referred because of moderate weakness of right leg and slight weakness of right upper extremity. The child lived in a section where there had been several cases of infantile paralysis and, quite naturally, the family physician thought in terms of a possible infantile paralysis. No doubt most of us would have thought likewise. About 6 months previous to my seeing her the patient began to feel bad, to suffer with some general weakness, had a tendency to fall while playing and had some vague headaches. Recently weakness of right extremities and unsteadiness had become noticeable. Began to have some vomiting attacks and complained of pain in back of head. She had always enjoyed good health previously.

Examination revealed a very intelligent, coöperative child, with marked choking of eye-grounds, gait markedly disturbed, staggering from side to side, bilateral 6th nerve weakness, upper extremities hypotonic, lower extremities somewhat variable, at times apparently some hypotonia and at other times some increase in reflexes. Ataxia of upper and lower extremities, more marked of right and adidokokinesia of right, marked.

Impression: Possible right cerebellar tumor.

This was confirmed by surgery and a tumor was found to be an astrocytoma. The astrocytoma that occurs in the cerebellum in children, while histologically the same as astrocytoma elsewhere, has a better prognosis.

The next case is of special diagnostic interest. Are we dealing with brain symptomatology due to essential hypertension, benign or malignant, or to cerebral arteriosclerosis (chronic encephalopathy)? or are we dealing with vascular hypertension and a brain tumor?

Illustrative Case

A woman, 48 years of age, came to my office for an examination, with the complaint that she did not have good use of her right arm, of a peculiar feeling in back of neck, unreal feeling, and "when people talk to me I know what they say but I can't express myself back."

Some three years ago her b.p. was reported to be 235, she was not feeling well and had not felt well since that time. Some 6 months ago a new set of symptoms occurred but she continued to work until January 3rd, 1942. Important symptoms were numbness, difficulty in picking up objects, difficulty in reading, difficulty in expressing herself, faulty memory and a feeling of unreality. Four weeks ago she was in a comatose state for 24 hours. She has had

several subsequent comatose attacks, of shorter duration, headache and nausea at times.

The BP was 180/100, eye-grounds showed considerable edema, more marked of right, so far as could be told there were no visual field defects or nystagmus. There was no paralysis but a very definite sensory aphasia. She had some alexia (letter blindness, could see the letter but couldn't tell what it was), some agraphia and possibly some apraxic symptoms. That is, she showed inability to perform certain purposive movements when there was no actual paralysis present. These patients are able to carry out non-purposive movements. The patient was somewhat euphoric, flighty and facetious but coöperated to the best of her ability. After examination she returned home. On the following day when she was supposed to go in the hospital, she was found in a comatose state by her sister-in-law. She was placed in the hospital and remained in a comatose state for three days. At that time her BP was 235/100, spinal fluid pressure 480, total proteins 18 mg. %. After coming out of the coma, BP dropped to 180/100. Eye findings remained the same throughout.

Comment: The hypertension, headache, some nausea and vomiting at times, mental changes, sensory aphasic disturbance and comatose attacks warrant a differential diagnosis between hypertension, arteriosclerotic lesions of the brain and a space-consuming intracranial lesion. All these symptoms and signs may be present in essential malignant hypertension and due to so-called encephalopathy. The latter is a condition which may result in coma, localized aphasic symptoms, headache, vomiting and mental changes, although no other morphologic lesions are found in the brain other than possibly multiple punctate hemorrhages. If the kidneys are involved pre-uremia or uremia may precipitate some of the same symptomatology. In this particular case malignant hypertension is unlikely in spite of the fact that the BP has been as high as 235/120, because of absence of respective changes in the fundi. If malignant hypertension were present and general enough to involve the kidneys, then the renal concentration power would have been disturbed and the npn. elevated, which was not true in this case. In view of these findings the cerebral symptoms referable to encephalopathy in malignant hypertension or uremia can be ruled out. We can likewise rule out arteriosclerotic lesions in the brain. If her signs and symptoms, particularly attacks of coma, were due to a vascular accident she either would not have survived or would have shown more pronounced residual paralysis. As the most likely diagnosis, therefore, a space-consuming lesion was assumed. The aphasic symptoms in particular suggested that this lesion was probably localized in the left temporoparietal region, since she was a right-handed individual.

Confirmation: The pineal gland was shown to be displaced to the right and downward.

A large glioma, cystic astrocytoma in type, was fairly successfully removed from this region.

Primary Tumors Not Originating From Brain Tissue Proper

Tumors not directly involving the brain substance cells are the pituitary tumors, which constitute 18 per cent of all tumors, and, as a rule, present a fairly characteristic syndrome. The symptoms of pituitary tumors may be divided into endocrine signs, which usually appear early, and the pressure signs such as headache and failing vision, which may appear later. The acoustic or pontine-angle tumors, involving the 8th nerve, constitute 8 per cent and present a fairly characteristic syndrome. A careful history will aid greatly in diagnosis. Unilateral deafness and symptoms of unsteadiness should always make one conscious of a possible pontine-angle tumor. Tumors of the meninges, the meningiomas, constitute 14 per cent. They are encapsulated and slow-growing, as a rule, and the majority of them are not malignant.

In this classification I want to discuss one case, a meningioma. It is rather difficult to make a preöperative diagnosis of meningioma. These tumors arise from the leptomeninges and, as these cover quite a territory, necessarily the symptomatology is variable, depending upon the location. As a rule they are slow-growing but in this particular case the development of symptoms was rather rapid.

Illustrative Case

This woman, 57 years of age, presented two prominent clinical findings—right homonymous hemianopsia and sensory aphasia. She first walked into my office, accompanied by her husband, complaining of headache, forgetfulness and mind wandering. She was apparently in very good condition until three months previously when she suddenly felt dazed and became unconscious. She remained in a more or less semicomatose state for two days. After recovery she complained of dull headache, mostly left—and forgetfulness. She could not see well enough to read, though she could see the letters. She was also unable to write though there was no paralysis. Husband and neighbors thought the patient's mind not exactly right. She was able to be up and about doing some light duties about the house.

Examination revealed a right homonymous hemianopsia. She presented a certain amount of alexia and agraphia, also some apraxic symptoms. No doubt it was this sensory aphasia that caused her husband and friends to think she was not mentally right. As a whole she was unable to recognize words though on one or more occasions she could. When given a sentence to read would say "I can't." When asked the name of an object she sometimes would hesitate and seem confused; at other times she would smile; at still other times she seemed agitated and irritated with herself and would say, "I don't know what it is." Asked to write her name, she would make an effort to start, then say "I can't." On one occasion, shortly after being admitted to the hospital, she was seen attempting to brush her teeth with her comb. Spinal fluid studies revealed a pressure of 140 with no increase in proteins and a negative wassermann reaction. X-ray studies revealed one irregular small punched-out destructive area in the left occipital area, pineal calcified and slightly displaced to the right. Otherwise clinical and laboratory findings were insignificant. BP 145/75.

Comment: Right homonymous hemianopsia and sensory aphasia suggested a lesion in left cerebral hemisphere, posterior to optic chiasm.

After remaining in the hospital for a few days the patient thought she felt a good deal better and left against advice. This was unfortunate since the lesion could have been successfully removed. Some three days later she returned in a deep coma and shortly afterwards died. Autopsy revealed a meningioma in left temporo-occipital region.

Blood-vessel Tumors of the Brain

I feel it is pertinent to make mention of blood-vessel tumors of the brain. No doubt many of these patients die and death is attributed to an ordinary stroke of paralysis. If a patient has convulsive seizures, particularly of the Jacksonian type, and a facial nevus is found on examination, one should think strongly of a possible blood-vessel tumor (angioma) of the brain.

Illustrative Case

A man, 45 years of age, consulted me because of convulsions involving the right side of face. The first attack occurred about one month prior to my seeing him and since he had suffered similar attacks once or twice a week. The physical examination revealed a slight paralysis of right extremities and right facial muscles. He had a facial nevus over left side of forehead and face. Eyegrounds, fields of vision, spinal fluid and x-ray studies were entirely normal. No peripheral evidence of any vascular disturbance, other than mentioned. Exploration of upper part of left temporal lobe revealed extensive angiomatous formation.

The consensus is that these blood-vessel tumors or malformations originate early in fetal life.

Summary

The clinical interpretation of the symptoms which may be expected in the presence of brain tumors has been briefly discussed.

The correlation of headaches, convulsions, eye findings, obesity, hallucinations, mental changes and other symptoms has been considered in relation to the diagnosis of particular cases.

The case reports are divided so as to illustrate the following types of tumors:

1. Metastatic tumors
2. Primary brain tumors—the gliomas, both in children and adults, and
3. Primary intracranial tumors not originating from the brain tissue proper.

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Discussion

Dr. S. H. Shippey, Rock Hill:

I feel a great deal of temerity in attempting to discuss the subject just presented. I am reminded of a story Oscar Miller told on himself in this hall about his first consultation. The point was an old negro woman was heard to remark: "Well, he just as well of not come." My interest in the kind of work Dr. Barron has presented has been great since my interne days. I spent two years in Atlanta during Dr. Dowman's and Dr. Block's career there and was in the hospital where they took most all of their cases. I think Dr. Barron presented the subject in a manner which is most fitting for us who are not doing special neurology and neurosurgery. We need to know more about the symptomatology and signs. It is our responsibility to recognize these signs and symptoms and get them into the hands of specialists qualified to make the differential diagnosis.

Dr. Barron covered the subject well. He didn't say much about the cerebellopontine group of tumors. In Dr. Dowman's group of cases, something over one hundred, they ran about eight to ten per cent. In recognizing this group, if we remember the nerves most likely involved, it will help us a great deal. These are the 6th, 7th and 8th, principally and the first disturbance of the most common tumor is the neurinoma of the auditory nerve, so the first and most likely signs we are going to have and symptoms would be disturbance of vestibular and cochlear branches of the eighth, adiadochocinesia and nerve deafness and nystagmus towards the side on which the lesion is situated, and then we get ocular palsy and very often decrease or absence of corneal reflex, hypesthesia or anesthesia in the region of distribution of the trigeminal nerve and facial paresis. Then, as things progress, we get cerebellar ataxia and suboccipital pains. It may be limited to the side that the tumor is on or simply more pronounced there. Then as things progress further we get intracranial and papillary edema and may have convulsions. The nystagmus and the corneal areflexia may be noted only when, during the examination, the patient is placed on the side opposite the tumor, thus permitting the tumor to exert more pressure in the cerebellopontine angle.

The differential diagnosis of tumor in this region I am going to leave to Dr. Barron.

Dr. F. E. Kredel, Charleston:

Dr. Barron has well pointed out in his thesis that symptoms of brain tumor are very variable, so that we must consdier any progressing neurologic disturbance as a possible brain tumor until we rule it out and not wait for the late stage where the patient has headache and vomiting. His study of metastatic lesion interested me as did also the one of metastatic carcinoma. In my experience we are likely to find multiple tumors rather than a large tumor in the brain. Carcinoma of the meninges is difficult to differentiate from vascular lesions. During the past six months I have had the opportunity of observing four cases of vascular lesion operations, not by mistake but in a deliberate attempt to see if something couldn't be done to improve the condition after cerebral thrombosis. In those four cases the cortex was involved. On the meninges was applied a graft of temporal muscle. In all these cases improvement has been made and we are very much encouraged at the progress so far.

Dr. Clay W. Evatt, Charleston:

I want to ask Dr. Barron what chance a child has with glioma. I have three children in the same family. There are no other children in the family in whom the eyes have been removed. In another family there is a little negro boy whose mother noticed that he absolutely couldn't see any object at all. When he was three months old I told the parents that if we left the eyes in, the child would die and if we took them out, he would live. I wanted them to think the situation over and decide what they wanted to do and immediately the father said, "I have hard enough time with two good eyes and I don't want my child to linger long and be blind." Well, I made them wait a day or two longer and asked them again and got the same answer. I said, "Well, if the child has to die, let's see. Maybe his life can help solve some of our problems. We certainly don't know all there is about glioma."

Dr. Barron gives further classifications. I am going to ask to review the slides. I decided to take out one eye and leave the other eye. That was two years ago. The child comes in regularly every three or four months and is examined at the clinic. I send him to the x-ray man and he gives him, or not, deep ray therapy as he thinks best. The child is perfectly healthful in every way except he is blind.

I have in mind a case of a 14-year-old child reported in the *Journal of Otolaryngology* years ago. You all will probably remember the pictures of the child on the front pages of the newspapers in the mid-west.

I ask the Doctor what chance has a child with glioma.

Dr. A. A. Barron, Charlotte:

In regard to tumors in children, as the Doctor knows, no doubt, there are two main classifications—astrocytoma and medulloblastoma. Medulloblastoma is a highly malignant tumor and is sensitive to x-ray and that is the only practical treatment that we have. Astrocytoma can be fairly successfully removed. That is about all I have to say.

CORRECTION OF LOP EARS

(H. E. Coe, Seattle, in *Northwest. Med.*, April)

Lop ears cannot be corrected by any amount of taping, bandaging or use of retentive caps. An operation which removes a section of skin and attaches the skin or cartilage to the postauricular fascia results in a reduction of the postauricular sulcus and in drawing the scalp up toward the back of the ear which continues to project as before.

My practice is to work entirely from the posterior surface, not breaking the anterior skin surface even by a needle puncture. A generous incision is made on the posterior surface, reflecting the skin and subcutaneous tissues. Reflection of the perichondrium is difficult because of its firm attachment but with care and persistence it can be accomplished. The cartilage is cut by several parallel incisions 1 mm. apart, and two or three of the narrow strips removed.

In some instances the cartilage is kept in position without sutures over a small rolled dressing after the skin is closed; in others it is advisable to maintain the newly formed antihelix by two or three stitches of 00 chromic catgut in the perichondrium. The excess of skin is excised and the incision closed with interrupted or subcuticular stitches of stainless steel wire, gauge 36. When excision of a portion of the cartilage is necessary, both surfaces of the cartilage should be freed, the necessary portion removed and the edges overlapped.

The ear is held in position over a small roll of gauze by adhesive strips and a stockinette cap, sufficient dressing being used to maintain even, firm pressure. The dressing should not be changed for two weeks unless absolutely necessary, when the stitches may be removed and instructions given to continue wearing the cap at night for at least a month longer.

During the operation it is essential to avoid injury to the skin of the anterior surface of the ear and to be particularly careful regarding hemostasis. A hematoma will become organized and give results resembling a pugilist's cauliflower ear.

One of the greatest difficulties is in making the ears symmetrical, and to obtain a satisfactory result secondary correction of variations is occasionally necessary.

SURGICAL PROBLEMS IN THE DIABETIC

(L. S. McKittrick, Boston, in *Penn. Med. Jl.*, Mar.)

Can the patient with diabetes be operated upon with the same safety as the patient without diabetes? The answer is "no." Arteriosclerosis appears earlier in patients with diabetes than in the population; there is diminished local and general resistance to infection.

Emergency operations are to be done only in cases urgently demanding them. There are few surgical conditions which demand immediate operation. Every diabetic patient will be better evaluated by a period of hospital care.

Whenever possible the patient should go to the operating room with little or no sugar in the urine, acid-free, and a liver well stocked with glycogen.

After operation from 150 to 175 grams of carbohydrate should be given each day by mouth or by the parenteral route. Insulin is given according to urine and occasional blood sugar tests. We see no need for keeping the urine entirely free from sugar in the early postoperative period; we fear hypoglycemia more than a moderate elevation or small quantities of sugar in the urine; there is no evidence that wound healing is delayed, assuming that the diabetes is brought completely under control toward the end of the first postoperative week.

Spinal procaine, 75 mg., has proven most satisfactory for operations on the lower extremities and for short operations around the rectum and anus. Nitrous oxide-oxygen and ether or spinal procaine are used, depending somewhat upon the build and temperament of the patient and the length of operation. We prefer nitrous oxide-oxygen-ether following a procaine block of the abdominal wall for operations on the gallbladder and stomach.

Heavy preoperative narcosis is dangerous and unnecessary.

Carbuncle begins as small lesion and because of lack of treatment or mismanagement may reach huge proportions by the time the patient enters the hospital. In all our fatal cases the carbuncle has been at least 6 cm. in diameter and has usually been two to three times that size.

Rarely, if ever, should a carbuncle be operated upon as an emergency, nor should operation be delayed unnecessarily.

Surgical Treatment of Cardiospasm*

FREDERICK E. KREDEL, M. D., Charleston
From the Department of Surgery, Medical College of the State of South Carolina and Roper Hospital

THE SYNDROME characterized by a variable amount of regurgitation of both solid and liquid foods not caused by organic obstruction such as that from tumor, stricture or diverticulum is usually found to be caused by obstruction at the cardia of uncertain etiology. Since failure of normal relaxation of the cardia rather than smooth-muscle spasm seems the important factor, the term achalasia of the esophagus is supplanting the older term of cardiospasm.

In about two-thirds of the cases satisfactory results are achieved by conservative measures, which include instrumental dilation with bougies or the Russell hydrostatic bag.[1] Tucker[2] uses a pneumatic-mercury dilator. Vinson[3] was able to cure 95 per cent of his cases by instrumental dilation. Sodeman[4] found cures in 71 per cent.

Ochsner and DeBakey[5] have recently reviewed the surgical aspects of achalasia and reported two intractable cases cured by esophago-gastrostomy. It is pointed out that direct surgical attack on the cardia is reserved for those cases not relieved by peroral dilation. The operative mortality of 5 per cent is no higher than that from conservative methods in collected cases. After hearing Ochsner's paper in the fall of 1940, I found a case of achalasia requiring operation in the wards of the Roper Hospital, and this case I wish to report herewith.

A white boy, eighteen years of age, was admitted to the Roper Hospital on October 2nd, 1940, with the chief complaint of vomiting for six years. Almost every attempt to swallow liquids or solids was followed by immediate regurgitation without pain or discomfort. There had been some loss of weight for the first two years but his weight had remained at about 94 pounds for the past four years. Growth and development were retarded. Numerous attempts at esophageal dilation had been made with little improvement. The patient had learned to treat himself by swallowing a large stomach tube. There was no history of nervous instability or of emotional upsets. Tonsillectomy in 1938 had no effect on the regurgitation.

Examination revealed an underdeveloped, thin, pale, white boy of eighteen weighing only 90 pounds. Abnormal findings included slightly palpable cervical lymph nodes, blood pressure of 98 over 60, and hemoglobin of 11 grams. Fluoroscopic and radiographic study after barium meal on several occasions revealed almost complete stenosis of the esophagus at the cardia with marked dilation above. Esophagoscopy by Dr. R. M. Hope showed no evidence of new growth or other mucosal change. Dilators passed easily through the narrowed opening of the esophagus into the stomach. Dilation was performed twice without permanent improvement.

For two months a thorough trial of medical management resulted in only slight improvement. Antispasmodic drugs administered before frequent small feedings did not abolish regurgitation. Atropine, nitroglycerine, methyl acetyl choline and ergotrate were tried.

At operation on December 10th, 1940, the cardiac end of the stomach was exposed by a high left-rectus incision with division of the costal cartilages as suggested by Clute and Albright. The left lobe of the liver was retracted after division of its ligament. The lower end of the esophagus was freed from its attachments to the diaphragm and pulled down for several inches. In its distal two inches the esophagus was of very small calibre, tapering from 1 cm. in diameter down to the size of a lead pencil. The esophagus was controlled by a temporary ligature of umbilical tape. A *V* pyloroplasty type of incision was made along the end of the esophagus and over the anterior surface of the stomach. The inner layer of the closure was made with continuous 00 chromic catgut and the outer layer with interrupted mattress sutures of fine silk. The tape was removed and the stomach fixed to the diaphragm near the suture line. The enlarged cardia freely admitted the index finger.

The postoperative course was complicated by accumulation of sterile, clear fluid in the left pleural cavity, probably from excessive retraction during operation. Two tappings were necessary to relieve

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pressure. Radiographic studies three and five weeks after the operation showed barium rapidly passing into the stomach without obstruction. The patient was discharged on a full diet three weeks after the operation and followed in the clinic. He remained completely well for 2½ months and gained 25 pounds in weight. He subsequently regurgitated on six occasions over a period of two weeks and the barium meal revealed some recurrence of stenosis at the esophageal-gastric opening. Dilation with bougies through the esophagoscope was performed by Dr. R. M. Hanckel on four occasions between March 28th and April 28th, with relief of symptoms. Examination June 16th, six months after operation, showed the opening adequate. The patient's weight had increased to 120 pounds. Now, at 14½ months after operation, his weight is 128 pounds and there has been no recurrence of difficulty in swallowing, and he is doing heavy work in the Navy Yard.

Comment

The operative approach to the cardia in cases of achalasia is a matter of some debate. For the skilled thoracic surgeon with an anesthetist accustomed to positive-pressure anesthesia the transpleural operation may be preferred as it gives a wider exposure. However, the risk of pleural contamination and the increased dangers of operating through the widely opened thorax would seem to speak for the greater safety of the abdominal approach.

Postoperative stenosis is a frequent complication after various types of anastomosis of the terminal esophagus. The use of fine interrupted sutures and the avoidance of excessive invagination of the esophageal stump are technical points of importance in preventing subsequent stenosis. When some obstruction results from adhesion of inverted mucosal edges in an otherwise properly made stoma, early gentle dilation through the esophagoscope should bring relief.

Summary

A case is reported of achalasia of the esophagus in an eighteen-year-old boy. The symptoms were relieved by esophago-gastrostomy.

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Discussion

Dr. L. A. Crowell, Sr., Lincolnton:

I am very glad indeed to have heard this paper. We have had a number of cases of stenosis of the esophagus. It is a most distressing situation. Everything regurgitates. So far we have been able to relieve one. If I ever get hold of him again you may look for him down at Charleston. I shall not attempt surgery. I know my limitations in surgery. When I find a case requiring esophagastrostomy, I'll send him to you.

Dr. J. R. Young, Anderson:

I'm sorry I didn't hear the paper. If I were to count on my fingers the failures I have had, I'd have about eleven fingers when I got through. We have had cases of cardiospasm and have been able to relieve them by the use of sounds and hydrostatic pressure. I had a case last week that gave me one or two lessons. It is not really pertinent to this discussion except in one phase.

A negro boy riding a bicycle ran into the door of an automobile and the handle of the door penetrated his chest and tore straight through the throat and diaphragm into the abdomen. He was brought to the hospital and was not in much shock, strange to say. Under pentothal anesthesia we operated on him. He said before he went to sleep that he had a little heaviness in his stomach. We felt in there and pulled out the handle of the automobile door. It was in the belly cavity. We filled the fellow's abdomen with sulfanilamide and sutured rents in the liver and some in the chest, and the little fellow is getting well, strange to say.

The thing that I got out of it that I said was somewhat pertinent was that there was a beautiful approach to the esophagus and other structures through the chest cavity. It was wide open. He had no respiratory insult. He breathed along smoothly. Opening one pleural cavity, I don't think there would be much danger of getting respiratory insult during the operation.

EARLY DIAGNOSIS OF CARCINOMA OF THE LARYNX

(E. T. Gatewood, Richmond, in Va. Med. Monthly, June, 1941)

Carcinoma of the larynx makes up 4% of all malignant tumors of the body, 16% of all tumors of the larynx; 80% of all laryngeal carcinomas involve the vocal cords first and hoarseness is the only symptom at this stage so the patient is slow to seek early medical aid; and the physician fails to suspect cancer and to examine the larynx in detail when first consulted.

Mirror examinations of every patient manifesting hoarseness, or slight throat discomfort—as simple and easy as it is important—should be done every physician.

Direct laryngoscopy—a more formidable procedure—is indicated in every case when malignant disease is suspected by mirror examination. The importance of an early biopsy in a suspected malignancy is admitted by all.

Mercurial diuretics are of great value in controlling dyspnea due to heart diseases in the absence of manifest congestive heart failure, even in the absence of moist rales at the lung bases.—*Flaxman.*

Cases of angina pectoris there were with bouts of pain in one or both arms, and for varying periods of time the only manifestation of ill health. They were constricting in character, appeared suddenly on exertion, were felt usually at the wrists, forearms or elbows, and were relieved by nitroglycerine.—*Flaxman.*

Some Conditions Simulating Cardiac Emergencies*

THOMAS RUSSELL LITTLEJOHN, M. D., Sumter, South Carolina

IN CHOOSING this subject it is my purpose to call your attention to some conditions so often confused with a true heart failure. Much has been written in recent years about the symptoms of heart decompensations, but very little emphasis has been put on the signs that are not related to the heart; of these, this paper treats.

Case 1.—An obese matron, aged 57, who had had hypertension for several years, when I saw her had been ill for two weeks, supposedly with coronary thrombosis. She was lying on her right side, legs slightly flexed, having pains in the epigastrium. At the instant she was in an attack of pain of which she had had numbers each day. Blood pressure was 160/90, leucocyte count increased.

Coronary thrombosis could be excluded by the following findings:

1. She was lying in a fixed position on her right side. In coronary thrombosis, there is no certain position which relieves the pain. In this case she found ease on right side.

2. The pain characteristic of coronary thrombosis is continuous and does not come in paroxysms. X-ray examination showed the patient had gallstones.

Case 2.—A gentleman, 66 years of age, was suffering from attacks of dyspnea coming on at night. He had had a previous diagnosis of cardiac asthma and hypertensive heart disease. The history was that the attacks had only been for the past three weeks. The arteries were sclerosed, tortuous, blood pressure 190/110, heart slightly enlarged, rate regular, systolic murmur heard at apex and base. There were no other signs of cardiac decompensation. The lungs showed many rales anteriorly and posteriorly on both sides of the chest. They were inspiratory as well as expiratory, and also squeaky.

When rales are cardiac in origin they are inspiratory, moist and heard only at the bases. Where they are due to an edema of the lungs, of cardiac origin, they are bubbling in character and the patient is otherwise very ill. He was told to discontinue the digitalis and was given iodide of potash and ephedrine and was very much improved. Three years later he died of influenzal pneumonia.

In cardiac asthma the patients have thoracic agony but dyspnea is not common in angina pectoris. There is no pain in cardiac asthma but difficulty in breathing with a sense of impending death.

Case 3.—A gentleman of 67 with shortness of breath especially at night, sent in for cardiac decompensation. He was cyanotic and had had these symptoms for several years, but more often and more persistent in the past two years. His blood pressure was 120/80; antero-posterior diameter of the chest increased. The lungs were hyperresonant. Heart sounds were weak; heart action regular; musical rales everywhere. There was no congestion of the liver, nor edema of dependent parts. X-ray examination showed heart and aorta normal; emphysema of the lungs.

This patient did fairly well under treatment for asthma and died of influenzal pneumonia a year after he was first seen.

Case 4.—A matron, aged 55, was seen at night, complaining of pain in the cardiac region. These pains were affected by posture. She could not lie on the left side, and had had three attacks that night, each paroxysm lasting several minutes. She had had three similar attacks, and had stayed in the hospital for thirteen weeks during two attacks, and in bed eight weeks during the third attack. Examination showed pain below and outside of the sternum.

Pain on pressure excluded heart pain.

Case 5.—A white man, aged 58, was seen five years ago, with precordial pain, attacks always coming on about noon while at rest, during the lunch hour. The attacks usually lasted about an hour, or until he could get medical attention. The seizures were of several months duration, averaging two a week. He described the pain as "sticking," always on the left of the sternum just below the breast. The blood pressure averaged 160/100. He was always relieved by nitroglycerin, strychnine, or any other pill that he took. A competent observer saw him with me and diagnosed the case as angina. This person is the thin type and has always been very apprehensive about sickness in himself or any member of the family. His financial status improved and his symptoms disappeared.

As we review this case we know it is one of hysteria. Angina, although it is common to a person of his age, does not come at a certain time of day and it is unusual to have an attack always during the rest hour. The pain is deep in angina and can never be delineated with the finger as he could outline his.

Case 6.—A white man, aged 44, was seen three years ago with complaints of palpitation, precordial pain and dyspnea. He had dizziness, sweating and cold extremities. A year prior to this he was treated in a hospital for coronary thrombosis. On careful history, he said that this pain was on the left side below the nipple and lasted only a few minutes. For several years he had had low blood pressure and the symptoms of which he complained when I first saw him. Blood pressure was 90/50, pulse 100, regular. This case is one that is commonly seen by most men in general medicine—neurocirculatory asthenia.

In these conditions nervous symptoms as tremor, paraesthesia, are commonly found. These patients usually have more symptoms than an ordinary case of organic heart disease. It is not so much what they tell you but how they describe their symptoms.

*Presented to the 44th Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greenville, S. C., February 23rd-24th.

Case 7.—A white man, aged 42, seen four years ago, had been in bed for two weeks with supposedly coronary thrombosis. He gave a history of these pains coming on rather suddenly. When in another city he was seen by a very capable internist who made a diagnosis of coronary occlusion and told the patient to lie in bed for at least six weeks. On careful history I found that prior to this time he had had some pains in his upper dorsal region. His blood pressure was normal; the arteries were soft. The heart rate was regular, no murmurs. This man while lying perfectly still in bed was at ease, when he tried to move his body he would have widespread pains in the left side of chest. When he was first seen he had an electrocardiograph study made and the physician said, without a doubt, it was a case of coronary occlusion. These electrocardiograms were sent to one of the best cardiologists in the country and he reported that he not only found them normal, but had another expert who gave the same opinion. X-ray examination of his spine showed arthritis of the cervical and upper dorsal region. The picture also showed his heart and aorta as normal.

We can exclude the occlusion in a case like this by the patient lying in a fixed position and only having pains on movement of his spine. We cannot blame the electrocardiograph but ourselves for misinterpretations of the readings.

Arthritis in the spine is common, especially at the time of life when cardiac pains are likely to appear. Changes in the vertebrae are often widely extended, and pains from such cause should be easily diagnosed from true heart pains. Heart pain in the beginning is usually localized by the patient in the center of the chest. Root pain occurs in band-like zones, narrow on the front and wider posteriorly. Heart pain usually jumps from one nerve to the next without having completed the original circuit before it spreads to the next nerve. A patient remembers very well, months afterwards, the location of root pain by putting his finger over the entire area that was painful. This is in contradistinction to heart pain, in which case the patient can very vaguely locate the area involved. Heart pain usually begins in front and radiates to the cervical or dorsal region, whereas the root pain usually begins in the spine and radiates forward or backward and always goes beyond the nipple line to complete the circuit of the nerve root distribution. If the heart pain begins in the back and radiates forward, there is a wide gap of uninvolved root zone on the chest wall. Root pain is reported as sore, nagging, or, as Kilgore describes it, that of "a red hot needle," nipple point pain. Root pain, at the beginning, is usually as intense as it is during the entire attack. The heart pain is most likely to increase to a peak.

In closing I wish to express my appreciation to Dr. Lewis Gunther for his article, "Differentiating Pains in the Chest," and for information derived from correspondence with him. I have freely abstracted this article in reference to pains in the chest.

Discussion

DR. H. F. STARR, Greensboro:

Dr. Littlejohn has rendered a valuable service in discussing various conditions which may simulate cardiac emergencies. I wish to emphasize one point by calling attention to a rather common and minor painful condition which ordinarily does not resemble pain of cardiac origin, but when occurring in a patient who has had an attack of coronary occlusion or is known to have coronary disease may present a problem in diagnosis.

A patient who had made an excellent recovery from an attack of coronary occlusion a few years previously, while engaged in work about the house requiring reaching, stooping and exertion to which he was unaccustomed, was suddenly seized with agonizing pain in the left shoulder region and down the left arm. Instinctively the arm and shoulder were held immobile. The pain was intense and he began to feel faint and broke out in a sweat. He lay down on the couch. After a couple of minutes the pain disappeared. Any one of us arriving upon the scene afterwards and hearing this story would, I believe, have been justified in assuming that the patient had suffered an attack of effort angina, until it could be determined otherwise. But this was not angina and the symptoms were not of cardiac origin.

Additional details revealed the fact that the patient had occasionally been subject to cramps brought on directly by moving a limb in an unusual or awkward position. A similar pain had occurred in the right arm and shoulder more than once within the previous few months. On this occasion the cramp in the left side was brought on by reaching for a screw driver with the left arm in an awkward position. The patient's history of a coronary occlusion a few years previously, together with the fact that the pain happened to be on the left side, created a situation calling for close attention to circumstances preceding the attack and the exercise of common sense in arriving at a diagnosis.

As to the cause of these sudden severe cramps of brief duration brought on by some unusual or awkward movement I must confess I know of no answer which to me seems entirely satisfactory. Few writers even condescend to mention the symptom in more than the most casual way, let alone attempt to explain the cause. The pain is generally regarded as muscular. It may be. Its suddenness of onset, its severity and briefness suggest the possibility of nerve pressure. Osteoarthritis of the spine with hypertrophic changes causing narrowing of the intervertebral foramens could, it is conceivable, with an unusual twist or movement cause an impingement upon the nerve root giving it a sudden pinch where it passes through the involved foramen, giving rise to sudden, excruciating pain of brief duration. When the pain is in the arm, the fifth, sixth and seventh cervical vertebrae would be involved. This explanation may not be correct, but there is some support to this theory in the fact that the patient whose episode has been described has since developed röntgenological evidence of osteoarthritis of the cervical vertebrae with chronic radicular pain referred to the right arm.

Jostes* reports that by means of the laminagraph, an instrument which provides for a synchronized coördinated movement of the x-ray tube and film about the part under study as a fixed axis so that shadows of objects not in this axis are dispersed on the film, he has been able to demonstrate changes in the cervical vertebrae and their articulations in patients suffering from chronic pain in the neck, shoulders or arms where careful study and repeated ordinary x-ray examinations had been negative. Many of these patients had been tagged with the diagnostic label neurasthenia, which is used all too often as a cloak for our ignorance.

*Jostes, F. A.: Neck Pain. *A. M. A. Journal*, Jan. 31, 1942.

Factors in Childhood Leading to the Development of Warped Personalities*

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As IN MANY medical and surgical cases coming to the physician, the usual psychiatric case is a climax to a preliminary chain of causes, despite the apparent acuteness of symptoms. An attack of gallbladder colic, or the appearance of unusual fatigue and loss of weight, in a patient tells the internist and surgeon that certain preliminary pathological changes went on before frank symptoms occurred. The sudden onset of mental symptoms, be they indicative of neurosis or psychosis, tells the psychiatrist that the present clinical picture of the patient is based on an already existing nervous disorder.

Preventive medicine is just as important in psychiatry as in any other specialty in medicine. We would like to head off the development of overt mental illness; we want to not only spot the incipient psychotic and keep him from breaking down but we also want to prevent the development of even as much as incipiency. We know from experience that most neuroses and the functional psychoses (schizophrenia or dementia praecox, and the manic-depressive group) are reached by progression of certain personality abnormalities. If we can promote the development of normal personality we are practicing good mental hygiene and preventive medicine.

Our next step is to review the preliminary psychopathology of personality and human behavior. Let us, therefore, approach the problem of maladjustment by considering some of the factors which in childhood and adolescence are diverting the individual from the comfortable groove of an average well-rounded personality.

Before discussing the actual factors we shall enumerate a few of the rather clear-cut varieties of defective personalities, remembering that there is considerable overlapping of character traits from one to another abnormal personality state. The common denominator of these defective personalities is some abnormality of emotions. Briefly, the main defective personalities are as follows: *the inadequate; the insecure or apprehensive; the submissive* who is a sucker and doormat for everyone; *the aggressive* who is noisy, boisterous and a bully; *the suspicious* who always questions the motives and actions of others as affecting him; *the seclusive* who seems emotionally cold and is a lone wolf; *the rigid* who is a detailist, uncompromising in his demands for perfection from himself and others; *the emotionally unstable* who changes rapidly from a mood of euphoric optimism to depressive pessimism along with unpredictable expressions of irritability, generosity, enthusiasm or resentfulness; *the ultrasensitive* who always is taking offense from ordinary discussions, let alone mild criticism or "kidding"; *the indecisive* who can't seem to arrive at a plan of action unless he obtains the opinions of several other persons and then hesitantly ventures a possible opinion; *the ambitionless* who drifts along and is content to let others carry the ball; and, lastly, the too publicized types called *extrovert* and *introvert*, which are rather general labels and mean essentially the friendly, outgoing sort of person in contrast to the reserved, retiring individual. There are other personality types, but those listed are representative; the important point is that mixtures of personality characteristics are the rule, although one characteristic may dominate.

We will briefly define those factors which influence in an unfavorable manner the symmetrical development of a normal personality. After many years of effect on the individual these factors produce the warped personalities which make up the greatest proportion of psychiatric patients.

Heredity may inflict on the individual major defects such as mental deficiency, Huntington's chorea, amaurotic family idiocy, epilepsy, Friedrich's ataxia, and certain neuromuscular dystrophies; remembering, of course, that heredity cannot be blamed for all of these conditions. Much less specific, but clinically significant, are the so-called psychopathic families in which occur an abnormally large proportion of psychotics, neurotics, alcoholics and suicides: and the generally maladjusted but less dramatic cranks, faddists, religious fanatics and community misfits.

Congenital defects not only cause physical crippling but often personality crippling when the physical handicap is disfiguring or very incapacitating. Examples are hare-lip, cleft palate, meningocele, strabismus, facial hemiatrophy, club foot,

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congenital amputations, birthmarks, stigmata of congenital syphilis etc.

Nationality as a factor permits some conservative general conclusions: first-generation Americans have a much higher proportion of juvenile delinquency and adult maladjustment. It would appear that in many respects the old-country traditions of the family clash with the freer type of life, different behavior standards and customs met in American schools and communities. This clash puts an extra burden on the child or adolescent as he tries to live a dual life—that of a strictly dutiful child at home and a much less inhibited life outside where he can have the relatively carefree play-life of an American boy.

Low intelligence level, or low I. Q. rating, suggests certain probabilities for trouble. Experience shows that in general the more intelligent the child the more chance of normal adjustment; the highest incidence of maladjustment occurs at the dull normal and borderline levels, as these children and adults have the most difficulty in getting along even in the average community. The more intelligent find the average community not a complicated environment; while the feebleminded are usually tolerated by the community without much being expected of them.

Sibling position in the family is of some general import from a statistical standpoint—the only child and the first-born have one-third more chance of maladjustment than the remaining siblings. This is probably due to the harmful excessive parental attention heaped on them.

Sibling rivalry will have deleterious effects if parents expect a less intelligent child to reach the level of accomplishment of a more intelligent sibling, or if the parents play favorites and are grossly unfair in the division of their affections, gifts and educational opportunities among their children.

Physical condition, if materially abnormal, imposes an extra psychological hurdle. Examples are frailness, chronic illness, defects of vision and hearing, crippling conditions, severe acne, and the congenital defects already mentioned.

Maternal overprotection is well (but not favorably) known for its harmful effects, preventing the normal maturing of the child. After years of such influence the adolescent usually shows one of two rather clear-cut behavior patterns: 1) infantile dependence on not only the mother but on all adults since the youngster has never learned to look out for himself; 2) infantile egotism, the little tyrant of the household, the typical spoiled brat to whose wishes and whims the whole household must give service.

Parental emotional storms teach the child a similar lack of emotional control. Frequently if the unstable parent is the mother, who has hysterical episodes with hypochondriacal features of periodic invalidism, the child, particularly the daughter, will pick up these symptoms early and react in a similar fashion when under stress or frustration. Children and adolescents get most of their nervous symptoms from examples set by adults around them.

The unwanted or rejected child is one of the most pitiful individuals one can imagine. Infants, children, adolescents, adults—all persons—crave affection, attention and praise; too much of these will spoil a personality; a lack, and, even worse, a denial of these will stunt or even crush the child. The adolescent and adult can fight against, compromise with, or sublimate for rejection by those around him; but the child is too hurt and bewildered by the shock to do more than haphazardly withdraw or strike out blindly in protest.

Despite supposedly wider and better knowledge of *sexual matters* among young people, the amount of ignorance and half-knowledge is appalling. Parents and other adults still feel that the ability to make the normal sexual and personality adjustments needed in marriage is miraculously conferred as the words of the wedding ceremony are pronounced. Masturbation, pornographic literature, homosexuality, sexual perversion, prudery, frigidity, impotence, sexual timidity—all these are problems, one or two of which cause worry and conflict in most everyone's personality development at some time; and may persist and cause adjustment difficulty in later life. The pediatrician and the family physician in routine cases, and the psychiatrist in special cases, are best fitted to answer the questions of, and give the explanations sought by, the growing child concerning sexual matters. This applies also to the couples planning marriage or recently married.

Faulty schooling scars many a child's personality. The chief considerations are 1) overstrict discipline of routine, useless types; 2) failure to make classwork interesting and diversified instead of the usual rote of memory and monotony; 3) improper class placement; *i.e.,* too slow for the unusually intelligent child who gets bored and mischievous; too fast for the dull or unrecognized subnormal child who then is bewildered and resentful.

Ridicule of career-goal can do much to destroy initiative and ambition in the youngshter. All children go through the stages of changing from one life ambition to another, and some careers they desire are ridiculous or impossible because of relative intellectual handicap or severe economic deficit. No matter what the reasons for inappropriateness of a certain career-goal, the child should be encouraged to investigate all the requirements of

that particular desire, including the years of study, cost of education and opportunities for advancement. In the course of several years the child, now in mid or late adolescence, will have reviewed several types of adult trades and professions and will be able to make a much wiser choice as to his life-work and economic future.

In keeping with this is the handicap of *an ignorance of the value of work*. From early years the child should be taught and given the responsibility of household chores. As he or she grows older this should continue; pocket money should be earned; part-time jobs outside the home should be encouraged, keeping in mind, however, the need for an adequate time each day for outdoor play and other types of recreation. First-hand acquaintance with manual labor and the hard-earned dollar has definite character-building value.

Over-discipline and under-discipline each has its bad effects; the former often produces a submissive individual or chronic sullen hater; the latter a selfish, aggressive person in constant clash with his environment because of failure to control his demands for personal freedom at the expense of the rights of others.

Lack of group social contacts interferes with normal development of self-confidence, knowledge of human nature, and comfortable sense of social ease. The child who is kept from frequent contacts with others his age never learns from experience and observation the many different types of human beings that make up the world; and in later years he is apt to be at the mercy of others, to be cheated, imposed upon, or ignored by those around him. Further than that he never completely learns the way to smoothly adjust his own ambitions and rights with those of other people.

Lack of competitive activities in childhood and adolescence prevents the development of ability to give and take victory or defeat, success or failure. The individual does not learn the full meaning of sportsmanship, of rivalry, of ordinary good-natured competititon which are present everywhere throughout life. Because of this deficiency in his development, the individual is tremendously handicapped in facing and handling that amount of cut-throat competition we all meet sometime in life.

Economic status must be considered from at least two angles; 1) slum sections have from two to ten times the rate of juvenile delinquency, adult criminality and psychosis as compared with middle class and more prosperous urban and rural areas; 2) if the parents are excessively sensitive about their economic level, be it of any level, the child's sense of values concerning money and prosperity often become quite warped.

Our next thought is what measures can be taken to offset the harmful influence of these factors. Time permits only a few general considerations. The individual's biggest job in life is to get along with others, and in order to do it and protect his own personality and interests he must be as mature as the next person. Maturity is reached only by a gradual process of handling the increasing responsibilities demanded of a unit in society, in the community—the responsibilities increasing from infancy to adulthood. We can promote this maturing process by having the child and adolescent engage in group social activities of both work and play types, such as school projects (dramatics, language clubs, school newspaper, band, sports—both varsity and classroom teams), 4-H clubs, Boy Scouts and Girl Scouts, hobby clubs, Y. M. C. A. and Y. W. C. A., and church social groups. Along with these must go a share of the everyday activities and responsibilities of the home.

Maturity is the best single word to describe the goal of therapy. To help the individual mature we must give him a proper feeling of importance; sympathize with his difficulties but temper that sympathy with skillful demands for acceptance of certain responsibilities, certain working capacity, certain standards of behavior, all which are then slowly increased in amount on the way toward finally reaching adult proportions.

Conclusions

If one will but keep in mind the types of defective personalities and then review the factors which have a warping influence, the cause-and-effect relationship will become quite evident. Unfortunately the sequence of cause and effect is less precise and prompt in disorders of the mind, as compared with many physical illnesses. We cannot say with any assurance that if a child's parents do not stop rejecting him he will develop a grave inferiority complex, because a sympathetic and understanding grandparent or other relative may quietly supply most of the missing affection and attention, and the child may get along quite well. We can say that if certain factors tending to make the child develop a defective personality are allowed to work on the child and adolescent long enough, and are not offset by helpful influences, then the child most certainly will become a personality misfit.

At this point we arrive at the preventive-medicine principle underlying our whole discussion. Experience has shown that the individual will mature evenly and gradually from birth to adulthood, unless an excessive number of crippling psychological influences is exerted on him for too long a time. The more we recognize these crippling psychological influences the more promptly and effectively we

can apply the very best practical measures in prevention and cure of mental, nervous and personality disorders.

Discussion

Dr. Wm. Ray Griffin, Asheville:

The personalities of human beings are as varied and as numerous as there are individuals. However, there is some uniformity in these because there are certain things that are common to all that play a part in the making of these personalities. Some of these are the country, the state, the city, the county, the church, the school and the home. The home plays a greater part than all the others combined. Experts disagree on many points but they agree that the period of the first five years of a child's life is the most important, that in that period are the fundamental, physical and mental habits and social attitudes formed. At this time the parent is the only teacher the child knows and the home is his world. No problem is so worthy of the parent's time and effort as that of so developing the child's personality as to give him or her the best start totward a happy and efficient adulthood.

This involves more than loving the child, and being interested in his welfare. Knowledge is necessary for this, just as it is for any other, important task. Lack of understanding of the mental side of a child's life and the lack of consideration of parents for the welfare of their children is one of the most grievous faults of mankind today.

Children grow up to be men and women, and many of them successful men and women, in spite of insufficient parental knowledge of their needs and insufficient help. Thousands, on the other hand, grow up to be unsuccessful and unhappy, and die after a long and hard struggle, having been denied the better things of life because of lack of proper instruction and discipline far back up the line. It is always well to remember that the intellectual, emotional and physical aspects of child life never operate independently of each other very long at any time.

In this day of specialists it is far better to be able to consider the totality of the child's development and relationship, rather than dismember the child and assign his physical health to one, his mental health to another, his education to a third and his social welfare to a fourth. In other words the family physician should be competent to handle all these problems; then the work in this field would be more far reaching. Heredity and environment are two factors which always come in for consideration when we think of any individual in connection with his success or failure in life. There are those who think that heredity influences infallibly, determines character, conduct and personality. There are those who ascribe to environment the major role in the mental, moral and physical development of an individual. Hereditary factors are constantly being influenced by environment from the time of conception. Environment would be helpless to exert its influence were it not for the inherent traits which are passed on through heredity. One author states that "we inherit our parents' tempers, our parents' consciousness, shyness and ability as we inherit their stature, form and standing." Another states "the influence of heredity which is now the fashion to rate so highly is nothing compared to the influences which mold the man after he comes into the world." The hereditary factors are more or less fixed and cannot be altered, environment can always be improved.

Another great factor which plays an important role in life is habit. Habits are good and bad. The person of acquired good habits is the one who is usually the worthwhile citizen. The person of bad habits is usually the failure. It is important to remember that the child at birth is without habits and that the very process of existence necessitates the taking on of various modes of action. Whether these habitual modes of action are to be of a desirable or undesirable type depends to a large degree upon the training the child is given. This emphasizes the great importance of the relationship between parent and child. It is appalling that this relationship should receive so little attention. The child is endowed with instincts; *i.e.,* tendencies or impulses to act in a given manner, these being usually toward self-preservation. He is untrained, uneducated, without experience; he is motivated by his desire for those things from which he will derive comfort and pleasure, avoiding those which will bring him discomfort and pain. Here is where the parent begins the making of a spoiled brat or a lovely, obedient, well-behaved child.

Dr. Sullivan, closing:

All of us who have the care of children, whether our own or as patients, directly or children of our adult patients, should keep in mind one essential factor which I stressed in the paper, and that is the fostering of maturity. As soon as accent is laid too much in one direction, over or under—financial status, community status, what ever—personality deformity ensues, usually with the child developing a feeling of inferiority along that particular line.

The various factors I outlined can't be discussed in detail; but using the outline I mentioned and listing particular cases, particularly those in the field of general practice, I have a hunch you will find that in those particular children illness is aggravated by emotional factors. Old-time practitioners, with their knowledge of the family, as a whole and as individuals, helped probably as many with their personality problems as with their physical problems. And much of this help was preventive.

OXYTOCIC DRUGS DURING THE PUERPERIUM

(A. E. Kanter, *et al,* Chicago, in *Ill. Med. Jl.,* April)

An ampule of ergotamine tartrate 0.25 mg. in combinatiton with ergonovine tartrate 0.125 mg. intramuscularly at the conclusion of the third stage of labor followed by the use of one tablet of this preparation t. i. d. for three days induces involution of the puerperal uterus in a more satisfactory manner than does fluid extract or ergot.

The ampule solution causes no pain on injection, and is free from the pressor effects of pituitary as well as the possibility of allergic reactions. The tablet dosage form is devoid of the objectionable odor and taste of ergot.

Sulfanilamide compounds show, in some instances, a fall of temperature to normal and the disappearance of the organisms in the blood stream of patients with endocarditis lenta. The cure of a case of acute ulcerative endocarditis in a 62-year-old man followed the moderate dosage of sulfanilamide over a prolonged period of time.—*Flaxman.*

Although congestive failure alone may explain up to one degree of fever, for fever in cases of congestive failure in the order of frequency the four most common were: pulmonary infarction, pulmonary infection (especialy bronchopneumonia), active rheumatic fever, and acute coronary thrombosis.—*Flaxman.*

After follow-up periods averaging 7 years, 50% of a group of 175 patients with acute rheumatic fever showed no evidence of heart disease; there was no constant relation between the severity of the illness or the number of recurrences and the development of cardiac damage.—*Flaxman.*

All electrocardiograms should be made with the subject in the reclining position.—*Flaxman.*

Bacteria — Rumors — Propaganda — War*

C. Charles Burlingame, M.D., Hartford, Connecticut
Neuropsychiatric Institute of the Hartford Retreat

THERE SHALL BE "wars and rumors of wars," but today the emphasis should be placed on the rumors *in* war. Never before in the history of all mankind have we approached a war in which psychological factors were employed with such skill and such devastating effect. A few generations ago a person would have been considered entirely bereft of his reason had he suggested that a *whole army* could have been inactivated and destroyed *with words*, mere words, and more words, by impressions rather than by fact; but that is exactly what has happened in this present-day, world-encircling struggle for survival. True, in ancient times and in our own early history there was indulgence in deceit, in misinformation and the creating of the wrong impressions among the enemies; but never before has this form of warfare attained anything like the magnitude nor the effectiveness of today. It would seem that man's ingenuity, as evidenced by his inventive genius of the past few decades, has also shown itself through his understanding and command of psychological possibilities; and that he has at his command, for the first time, stupendous machinery for the distribution of knowledge, and the misuse of facts and fantasies.

Toward the close of the last war the radio was just coming to its own and the means of transportation, including the airplane, was in its infancy. It has been during the past twenty years that the airplane and the radio have circled the globe, and with every improvement in radio transmission and reception has come the broadening of propaganda possibilities. *In previous wars it was not possible for a leader to speak to his own people* with anything like the effectiveness now possible through the use of the radio. In past wars it was quite impossible for a leader to *reach the masses of the opposing nation;* but today a leader has it within his power to *speak to his own people and to every people of the world* with no practical way of his voice being stopped. Compare this, if you please, with the easy control, the relatively easy control, of enemy propaganda in all preceding wars. Literally this war has become a battle of machines and a battle of words.

It has been said that for every destructive offensive weapon there has promptly been developed a defensive weapon. Let a sixteen-inch gun be manufactured and a new armor plate is devised which leaves the balance exactly where it was.

But there has been a sad lack of understanding that there is such a thing as psychological warfare, and we have been very slow indeed in developing a defense against it. It is idle talk, even adolescent, to call names and decry the efforts of an enemy merely because he is an enemy. Nazi Germany has been extraordinarily skillful in the development of the offensive weapons of psychological warfare. There now seems no shadow of a doubt but that they succeeded in destroying the effectiveness of French arms as much through their psychological offensive as through their well organized and powerful mechanized attacks. Let us not underestimate this psychological aspect of modern warfare because by so doing we fail to build our own defensive; and may I interpolate by so doing, we may fail to develop our own offensive.

For the purpose of convenience, and possibly of clarity, we might well develop our subject of propaganda, counter propaganda, rumors and their antidote under the composite heading of psychological warfare. Now to go a little deeper into offensive psychological warfare. It is not at all complicated except in its manifestations; it is extraordinarily simple in its conception and we psychiatrists and workers in the field of mental health should understand it perfectly.

Psychological warfare is nothing more nor less than the creating of individual and group neurosis —I might say *psychosis*—among the people of your enemies. It is nothing more nor less than taking reasonably stable individuals and making them unstable. It is nothing more nor less than producing psychiatric conditions *en masse* among your enemies through the use or misuse of known psychiatric factors, principal among which is suggestion. If you can succeed in making a doubtful person unstable, or in making the unstable more unstable, you have gained more than individual susceptibility; because under these circumstances the neurosis tends to be contagious.

To be a little more specific, how is this done? We are more apprehensive and more susceptible when we are sick, tired or fatigued, and again, as

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*Notes on address delivered Wednesday, April 22nd, 1942, at the evening meeting of the Virginia Conference of Social Work of the Mental Hygiene Society of Virginia.

Brucellosis No Rare Disease*

J. S. Holbrook, M. D., Camp Blanding, Florida
From Davis Hospital, Statesville, N. C.

I appreciate the opportunity to present a paper before this association of the doctors of Virginia and the two Carolinas. Everyone here must have a lively interest in the problem of brucellosis, whether he be private practitioner, public health official, sanitary officer, bacteriologist, veterinarian, member of the armed forces of the United States, or private citizen.

In turbulent times, such as we are now experiencing, we also have interest in our National defense and resources. The threat of a prevalent chronic disabling disease and the menace of foreign military powers have much in common as enemies of this free country.

THAT GREAT DOCTOR, Sir William Osler, once said, "Know syphilis and all other things medical will be added unto you." That this adage might aptly be applied to brucellosis is reasonable after ten years of participation in the management of this disease and its complications in man. A review of the medical and veterinary literature and a consultation of authorities in the several fields of investigation serves further to impress one with the diversity of this malady, in man and his domestic animals.

Brucellosis includes all disease conditions caused by the brucella group of microörganisms. At different times and in different localities it has been termed mediterranean fever, Malta fever, goat fever, Bang's disease, undulant fever—in all, 24 different names.

The brucella group are three slightly different strains—that found in goats *Brucella melitensis;* that in cattle, *Br. abortus*; that in swine, *Br. suis*. The name brucella is in fitting recognition of Sir David Bruce, a British army surgeon who in 1887 isolated the organism from the blood of an English soldier affected with fever on the isle of Malta. At that time and place the germ was traced to the milk of goats. Nine years later Bernard Bang, a Danish veterinarian, discovered the causative organism of infectious abortion in cattle which organism was for some time known as the Bang bacillus. Later Jacob Traum, an American, recovered a similar organism from aborting swine. For twenty years it was thought that these were entirely different organisms. An American bacteriologist, Miss Alice Evans, in 1918, proved that they were merely different strains. This discovery was the important link connecting the disease of cattle with that of man.

Since that time it has been observed that either of the strains may affect either of the three, as well as a number of other animals including fowls, and could be transmitted to man. The strain from the goat produces the most violent effects on man; that from swine is second in severity, the bovine strain the least severe.

In 1927 the U. S. Public Health Service was able to collect only 112 reported cases in man. By 1930 the number of reported cases rose to 1,385 and came from every state in the Union.

In 1934 the Federal-States Coöperative Program was inaugurated in this country and since that time by the test-and-slaughter method much has been accomplished in freeing cattle of infectious abortion.

In the State of Florida in 1934, of 38,109 cattle tested 23 per cent were found positive and condemned. Each successive year the percentage grew less, in 1939 it was less than 1 per cent. In the entire country by 1940 almost two million cattle, slightly more than 5 per cent tested, were found positive and were condemned.

The chief mode of transmission of the disease is by the ingestion of raw milk and unpasteurized dairy products derived from cattle infected with *Br. abortus*. Direct dermal transmission may be the mode of infection among laboratory workers and technicians, dairymen and veterinarians.

Hardy has demonstrated by animal experimentation that the skin may act as the port of entry of the organism. There is no positive evidence of man-to-man transmission of the disease.

All available data indicate that virulent strains of the brucella group may infect any species of domestic animal. There are numerous reports of either spontaneous or laboratory infection of monkeys, guinea pigs, goats, sheep, cows, mares, swine, rats, mice, dogs, cats and chickens.

In some animals no fever results, although the blood may give a positive agglutination reaction and the organs contain the organisms.

Shaw and others were able to infect monkeys by feeding them large doses of *Br. abortus* by mouth. Then the organs could be obtained from the blood or tissues. Infected monkeys showed a

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Two-Stage Gastric Resection for Stenosing Ulcer*

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BECAUSE of increasing evidence of the unsatisfactory results which so often attend gastro-enterostomy or the various types of pyloroplasty, we of the Park View Hospital have been following in recent years the lead of the larger centers in utilizing partial gastrectomy for most of our complicated cases of peptic ulcer, other than acute perforations, for which surgery is indicated. We have now done nine gastric resections for ulcer complications with no deaths and with satisfaction for the patients and for ourselves.

All of these nine patients were forced into operation through inability to get along on the usual medical routine, most of them because of varying degrees of obstruction. A number of them were badly starved and in several instances the effects of starvation were so marked that prolonged preoperative use of the various restorative procedures was necessary. In two cases our best efforts failed to achieve satisfactory rehabilitation and it seemed advisable to employ the two-stage resection instead of the usual one-stage procedure which sufficed for the others.

This operation, based on the partial gastric exclusion devised by Devine[1] for handling callous ulcer of the posterior wall of the duodenum, was described by Balfour[2] in 1935 as being occasionally useful in certain cases of carcinoma of the pylorus scomplicated by secondary inflammatory changes. The advantages of removing such growths in two stages are summarized by Balfour as follows: "First, the operation can be performed under local anesthesia; it takes but little more time than does gastro-enterostomy. Second, perfect drainage of the stomach is established immediately and the patient can take adequate nourishment without difficulty. Third, the second stage is usually simple, since the pyloric segment is free and can be mobilized quickly and easily. Furthermore, complete exclusion of the pyloric segment for a period of from ten to fourteen days will have lessened the activity of any inflammatory process to an astonishing degree, and growths which at the first operation appeared questionably removable may now be resected with ease. Finally, there is no interruption in the feeding of the patient since there is nothing to be done with the upper segment of the stomach at the second stage."

All of this would seem to apply equally as well for certain occasional badly depleted patients suffering from stenosing ulcer complicated by extensive, more or less acute inflammatory changes. However, with the recent great improvement in the preoperative preparation of these patients, the need for staging the operation, whether done for carcinoma or for ulcer, is much less than formerly. Obviously, too, as the individual surgeon's experience increases his ability to complete the operation in one stage increases also. Nevertheless, that at times some compromise short of completing resection in one stage is needed, even by surgeons of large experience, is indicated by Lahey's[3] mentioning 21 cases of resection by exclusion, and by the following statement by Allen:[4] "Doctor McKittrick has been very much interested in 'staging' the procedure of subtotal gastrectomy in difficult cases by dividing the antrum and proceeding with proximal subtotal resection as a first stage, and then deliberately going back six weeks later and removing the pyloric segment. This seems to me to satisfy a great many of the objections to the more radical one-stage procedure on these deeply adherent ulcers during their acute phase, or when the inflammatory reaction is so great."

A disturbing possibility is that the patient may refuse to submit to this second stage once he has been relieved of his symptoms and is able to take food satisfactorily. However, most authors insist that the pyloric antrum be removed in all resections if at all possible, to avoid the danger of recurring ulcer. Also, if the obstruction is secondary to ulcer on the stomach side of the pyloric ring there is the definite possibility that carcinoma may be present. The importance of these two considerations certainly outweighs the disadvantage of a second operation.

A definite contraindication to the two-stage procedure, or for that matter to the one-stage resection for exclusion, is the presence of complete obstructiton with the resulting danger that retained secretions in the isolated segment may force open the suture line. Lahey's[5] only fatality in twenty-one resections for exclusion was due to this occurrence. Where stenosis of this extent is present, a gastroenterostomy may be advisable, accepting the risk

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SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

THE TREATMENT OF VARICOSE VEINS

Our way of dealing with most varicose veins has undergone a great deal of improvement, based on a better understanding of the condition, the physiological as well as the mechanical problems that varicose veins present. The various tests that have been devised determine whether the long saphenous vein is at fault, or the short saphenous vein, or the deep veins.

The Trendelenubrg, one of the earliest of these tests, indicates the incompetency of the long saphenous vein but does not indicate at which point any incompetency is located; and for determining what treatment to use it is necessary to know whether or not the long saphenous svein is competent, and whether or not the deep femoral veins are open.

By elevating the leg and applying a tourniquet high just below the fossa ovalis then allowing the leg to come down and the patient to stand on this leg, we have the vein empty so far as any blood coming down from above is concerned. Then when the patient stands and the tourniquet is removed if the vein does not change any we take it that the Trendelenburg test is negative. In other words, the long saphenous vein is competent. A positive Trendelenburg test is obtained in the same way and is shown by removing the tourniquet, following which the varicose veins will immediately fill up from above down, showing that the veins above are incompetent and the blood comes immediately down into these veins causing engorgement of the entire lower venous system, particularly that which is already dilated and varicose.

A third Trendelenburg test to show incompetency of the communicating or the short saphenous veins is done in about the same way. When pressure is made upon the long saphenous vein just below the fossa ovalis, and the vein fills immediately when the patient stands up, we feel that this is blood coming from the short saphenous veins or possibly the communicating veins.

According to some, communicating veins do not play much of a part in this, but the filling is by way of the short saphenous veins.

Heyerdale states that in the performance of the Trendelenburg test, filling within thirty seconds of the superficial veins indicates incompetence of the lesser or short saphenous veins in the popliteal space rather than of the communicating veins. This indicates the necessity for a definite method of treating this type of varicose veins of the leg.

To determine the competency of the small, short saphenous veins it is necessary to press on the popliteal space back of the knee while the patient has the tourniquet on the upper part of the thigh, after having elevated the leg beforehand. Filling would indicate that the short saphenous veins are at fault rather than the communicating veins.

In the treatment of varicose veins of the legs it is necessary to relieve the back pressure and allow the flow of blood to go along through the *deep* veins.

When we once know exactly the condition of the veins then treatment can be undertaken with assurance. In many instances we have found it necessary to ligate the long saphenous vein immediately below the fossa ovalis, and the small communicating veins at the upper end of the saphenous vein. *It is absolutely essential to eliminate the branches of this vein in order to get a permanent cure.*

There are some cases not amenable to this treatment; and which must have such palliation as may be derived from the use of elastic bandages, elastic stockings, and sometimes special dressings as in case of ulcers.

The injection treatment of the veins, using one of the more effective sclerosing solutions, has simplified the treatment greatly.

Excising the upper part of the saphenous vein makes it possible to put a ureteral catheter from the upper part of the vein downward and then inject the sclerosing solution all along the entire length of the vein, by continuing the injection as the catheter is pulled upward. We can usually work the catheter down to a point below the knee. The best plan is to withdraw the catheter slowly and at the same time inject the sclerosing solution so that it will be distributed throughout the length of the vein. It is best not to inject any of the other veins for a week or even longer, until we can see just what result has been obtained from the first treatment.

After having a ligation of the saphenous vein it is better to be up and walking around, with an elastic bandage on the leg or a properly fitted elastic stocking.

From time to time any veins that need to be injected can be treated without any great difficulty, the patient being ambulant all the time.

The idea in these treatments is to *obliterate the superficial veins in which blood has stagnated and direct the flow of blood through the deep veins.* At the same time, the tissues being no longer edematous and the back pressure from the incompetent varicose veins being relieved, this will usually cause ulcers to heal rapidly.

HUMAN BEHAVIOUR

James K. Hall, M.D., *Editor*, Richmond, Va.

DOES EQUALITY EXIST?

Mr. Daniels is vexed, if not actually mad. I have no doubt that he is emotionally much more disequilibrated than any buck private and any second lieutenant nurse. Nothing, of course, disturbs a buck private, after he has been a private long enough to have become imperturbable; and the nurse, who is innately sagacious, as all natural-born nurses are, eventually becomes as wise as Aggie, whether she becomes a second lieutenant, a Brigadier General, or remains merely a nurse.

Mr. Daniels has become pestered by hearing that even when both are officially off duty the buck private and the Army nurse cannot fraternize and sororize, as in olden days, all because all Army nurses are now at least second lieutenants. And privates, buck or otherwise, are only privates, whose duty it is to obey orders, from second lieutenants and from all other high-ranking officers. Many a private has undoubtedly paid court, many a time, acceptably, too, to some goddess; often to a princess; occasionally, perhaps, to some King's Queen; and often, to be sure, to an angel, without causing obvious damage to service regulations, written or traditional, often with slight regard for veracity, and with rare regrettable sequelae, save an occasional sigh or a reminiscent tear.

Mr. Daniels must have been so moved as to verbalize his disapproval in an editorial in "The Old Reliable," his own paper, *The News & Observer*, of Raleigh. The morning paper of Richmond, *The Times-Dispatch*, features on its first page a story based on the editorial along with a photographic representation of Mr. Daniels. The former Secretary of the United States Navy, and our recent Ambassador to Mexico, had evidently heard that buck privates and Army nurses could not pay and receive court, one to the other, not even when each and both are off duty. The usual equanimity of Mr. Daniels was so disturbed by the rumor that he wrote a letter straight to the Secretary of War, who was once a fighting soldier himself. Letters addressed to a high Federal Dignitary are usually responded to by the Secretary's epistolary Friday, kept on the governmental payroll largely for that specific purpose. Mayhap the vexation of Mr. Daniels was aggravated by his failure to receive a reply from the War Department's very head. Mr. Daniels was officially informed by some sub-secretary that buck privates and Army nurses cannot be even make-believe lovers on duty or off duty, all because the nurse and the buck private live in different worlds, and courtship cannot be carried on from one world to another. An Army nurse is an officer of the United States Army, but a private is only a buck, whose duty it is to receive and to execute orders, to kill, or to be killed, when the time comes, to do the one or to submit to the other.

Even though Mr. Daniels is a Democrat, in the Hellenistic and in all other meanings of that much-battered term, whether he be in Wake County, in Washington City, on the high seas, or at the court of the Montezumas, he will ultimately find himself all flattened out by the steam roller of Mars if he continues his assertion that amongst democratic warriors when off duty there is no such relationship as that of superior and inferior, but that a glorious equality exists between privates and officers of the supremest rank.

In all Nature there is probably no equality. Without inequality there would be no warfare, no battles between groups of men, on land, on sea, or beneath it, in air, or deep in the earth. Warfare is made possible by the exercise of authority of the superior over the inferior. Where equality exists orders are neither given nor received. At some distant day man will learn that might always has and always will exercise domination, and that the strong always have and always will either rule or destroy the weak. That must be the obvious fact in life. For that reason, perhaps, man, whether primitive or intellectual, has always bent his knee in obeisance to a might greater than his own. The primitive is inclined to make of that might a Divinity. Such an attitude makes the might supremely powerful, makes it accessible by prayer, and assures the hope that it may be successfully invoked. Intellectual man is more and more inclined to deify the might within himself, made possible, in his opinion, by his increasing knowledge of science. But upon might alone can man depend for performance and for protection. Man's devotion to that belief is now world-wide in manifestation. After the wars have ceased man will fall again into his habitual moralizings—until he is caught, unprepared again, by the next war and the next and the next.

It is well that inequality is universal. Were all men equal there would be no incentive to effort. The poor man labours to acquire wealth; the unlearned studies to possess knowledge; the weak nourish and exercise themselves to gain strength; and even the ward-heeler may sometimes aspire to become President of the United States.

The life-history of every plant and of every animal constitutes only verification of the universality of inequality—the flow this way and that of energy.

Equality?— *Page 285*

PEDIATRICS

Edwin L. Kendig, Jr., M.D., *Editor,* Richmond, Va.

A NEW CONCEPT OF THE SCHOOL CURRICULUM BASED ON THE MENTAL HEALTH OF THE CHILD

Few are there among us who are satisfied with the kind of education being supplied our children; few pediatricians endorse the educational techniques in common practice on their patients.

Out in the Middle West, where people are bound less by the shackles of tradition and have more willingness to try out changes, there has grown up a remarkable clinic for the study and treatment of the mentally ailing. The treatment taught is not only the curative kind; it aims at prevention, this prevention beginning in early life and involving right education as important part of it.

A member[1] of this Clinic points out flagrant errors in our educational system and outlines corrective measures.

We err, this psychologist-psychiatrist tells us, in thinking that the child learns only what is formally outlined for him in school: "From the time the child enters the door in the morning, hangs up his coat and hat and greets his teacher and classmates, until he tidies his desk for the day and bursts out into the street when classes are dismissed, he is occupied with dozens of learning situations not scheduled in the curriculum." And these unassigned lessons may constitute the most important part of his education.

This profound thinker's comments and suggestions are endorsed by the Editor of this Department, and herewith passed on to its readers:

Curriculum is newly defined as all the experiences a child has under the guidance of the school. It includes not only the things the administration stipulates to be taught, but it also includes those which organization of the school system emphasizes, ignores or lets happen. Overcrowded school lunchrooms and insufficient time for eating teach hurried, unhygienic eating habits. Other conditions may teach, for example, poor posture, the habit of inattention, the psychology of "getting by," lack of initiative or window gazing.

The traditional concept seeks to fit the child into a mould. The functional concept seeks to help him to live in the manner best calculated to bring out his potentialities.

The functional system focusses attention on the child rather than upon subject matter. The promotion of his mental wellbeing entails a broad understanding of the development of personality on the part of all those who have anything to do with our schools. It is insisted that the relationship of the teacher and child is the only thing that matters.

Traditional school program usually means an inflexible schedule, devoted to recitations in subjects from textbook assignments made by the teacher. Administration is thought of as management of the children, the program, and the subject in such a way that progress is made in the textbooks of each subject in each grade at a uniform rate. Good discipline is thought of as the management of children, textbooks, and schedules so that children are amenable to adult management. A child's success is measured by his ability to make one prescribed grade each year. No subject assign has any immediate importance to the learner; it is significant only in that it prepares him to take the next step, equally meaningless to him.

The teacher in such a system who regulates rewards and punishments with as much justice as the situation will allow lessens the ill effects of such a system; but she cannot prevent the frustration and sense of defeat which comes from working at tasks which involve meanings beyond the stage of development of the child. The most sympathetic teacher cannot eliminate the fear of failure that attends examinations on well-memorized but meaningless materials; the most intelligent teacher cannot prevent the feeling of inferiority that comes from lack of success day after day; and the best teacher, with the very best methods, cannot make all children a success under such a system. The best she can do in the face of failure is to help the child bear his defeat as well as possible.

In such a system docility and unquestioning acceptance of things read and said are rewarded. The most successful child is the one who does each lesson as the teacher wants it done, and accepts without question the statements made by the teacher and the textbook writer. Such a child becomes increasingly less able to gauge success, except in terms of the present instructor's requirements. As he goes through high school or college, this becomes increasingly difficult, because the number of instructors increases and the agility required to sense the standard for success established by each puts a premium on intelligence.

The functional curriculum, in contrast to the traditional, places its emphasis on the child and his development. It selects the most desirable experiences that a child can have under its guidance, measured in terms of fostering desirable personality growth. What happens to children who are living with other children and adults becomes the

1. Dale Zeller, Emporia, Kansas, in *Bul. Menninger Clinic,* Mar.

prime concern of the curriculum maker. The skills learned are those which school living demands; flexible schedules are planned to give the maximum richness possible from living with a group at a particular age under guidance which has taken into account the needs of the learner.

While the teacher and her mental health play a deciding role in determining the mental health of the children under her direction, the best teacher is handicapped when she is forced to work under the traditional curriculum. The blockage which occurs when questions remain unanswered and curiosities unsatisfied because prescribed and assigned tasks leave no room for the immediate is unavoidable.

Experiences to be of most value must have continuity in the mind of the learner. The learning situation best suited to a certain period of development depends in part upon the social, emotional, physical and mental maturation of the learner and in part upon the social experience already had. Success at any level is measured by the growth of the learner as expressed in the adequacy of his social relationships. Experience that educates in this sense must grow out of the interests, curiosities and emotions of children reacting in a congenial group.

The school and home must have a common understanding of the child and his needs. Parents, teachers, administrators and physicians study children and their needs and from this study there evolves a program for the school.

Learning is to be measured by the emotional and social growth of children as well as by intellectual and physical growth. The goal in language instruction becomes the more effective use of language in human relationships, not in completion of a textbook. The criterion for progress in reading is the ability to choose and enjoy worthwhile books. The emphasis is on developing a desirable personality, not in mastery of subject matter.

Can anyone doubt the worth of a system of education such as that advocated by this member of the Menninger Clinic? Plainly this matter should be insistently brought to the attention of those who have the planning of our educational curricula, the direction of all our educational efforts. Plainly, family doctors and pediatricians having the charge of the physical and mental health and development of children are the proper persons to impress upon teachers, trustees, boards *et al.* the need for establishing a different goal as the aim of education, and for driving toward it after a different manner.

SURGERY

Geo. H. Bunch, M. D., *Editor*, Columbia, S. C

TRENDS IN THE SURGICAL TREATMENT OF HYPERTHYROIDISM

Until we know what stimulates it to hypersecretion and how to control this by a simpler form of therapy, effective treatment of hyperthyroidism must continue to be the operative removal of most of the gland. This wasteful sacrifice of an irreplacable organ so essential to metabolism is made necessary by incomplete knowledge of how its activity may be influenced through nerve supply, endocrine therapy or drugs. The final answer to the riddle must come from the experimental laboratory.

When thyroid surgery began it soon became apparent that operative treatment of hyperthyroidism had a prohibitive mortality rate. Because of the fearful mortality in the critically ill, operation on such patients was deferred until they had been given an opportunity with sedation and bed rest to pass the crisis and to stabilize. Some died during this period, but those who became stable proved to be better operative risks.

Those who did not become operable after bed rest presented the problem of accomplishing preoperative reduction of thyroid secretion. Necessity was the mother of invention and it became the practice in goiter clinics to cause localized necrosis of the parenchyma by making weekly injections of boiling water through a hypodermic needle into the thyroid gland. Primary reaction of the patient was negligible and gradual improvement followed.

Because blind injection was not without danger and because benefit from it was slow and uncertain, surgeons led by Crile and the Mayos advocated ligation of the superior poles of the thyroid gland to lessen gland activity by decreasing the blood supply. The operation was often done in the patient's room with minimum manipulation and with but little shock. The patients all improved. As the pulse rate slowed and as the extreme nervousness abated, they, almost without exception, gained weight and became more normal; and thyroidectomy was postponed until the optimum time of improvement had been reached, before the blood supply to the gland had been restored by collateral circulation.

Since marked improvement in heart action and the general condition of the patient was found to follow the oral administration of iodine, its use as an adjunct to bed rest has become almost universal in the preparation of the hyperthyroid patient for operation. Unfortunately the treatment

has been abused by being given in nontoxic cases, and in toxic cases beneficial effect has often been lost through the establishment of tolerance to the drug. After iodine therapy, properly administered, postoperative crisis is rare and multiple-stage operations are seldom necessary.

And now, except in nodular goiter, cases not sufficiently improved by iodine therapy may by radition of the thyroid be made safely operable so that preliminary operations in hyperthyroidism are indeed rare. In Crile's last series of 300 cases there have been no deaths, and in only two of the series was a multiple-stage operation done.

Before 1925, when the use of iodine in preöperative treatment began, thyroid crisis was the most common cause of death. From 1925 until the introduction of the sulfonamide drugs in 1939 most of the deaths were from pneumonia.

Postoperatively, thyroid crisis is prevented by placing the patient immediately in an oxygen tent and giving an abundance of fluid and glucose by continuous intravenous drip. The cooled oxygen tent prevents fever more effectively than do ice packs. Crisis occurs more often in summer. Crile says that aspirin which may be given rectally promotes sweating and is the most efficient antipyretic for combatting fever in thyroid crisis. Restlessness is best controlled by morphine. High-caloric feedings should be given, through a nasal tube if necessary.

DENTISTRY

J. H. Guion, D.D.S., *Editor*, Charlotte, N. C.

FLUORINE THERAPY FOR EXPOSED DENTIN AND ALVEOLAR ATROPHY

All the way from Moscow, comes a new, and, as it appears, promising dental therapy. The treatment[1] has a plausible appeal, as must have been so for its acceptance by the *Journal of Dental Research*.

Dentin makes up the bulk of the tooth. In the crown, the relatively impermeable enamel covers it, and in the root portion the cementum and the surrounding tissues afford protection. The gingiva, especially the gingival margin, is more readily permeated then enamel or even skin.

The exterior protecting barriers may be penetrated by anatomic changes in enamel, by functional changes, by exposure of the dentin in the cervical area or by other defects at that point. Pulp removal, by amputation or, especially, extirpation, exposes the vulnerable young dentin. Exposed dentin, like any bone tissue, cannot endure long contact with external media without hyperesthesia, infection and decay.

Since the pathologic phenomena in exposed dentin are so similar, a single therapy should be sought. The problem is to form a more-or-less effective surface barrier. Artificial production of a zone similar to natural hypercalcification in vital teeth should be possible for vital and pulpless teeth. Fluorination has been utilized to produce such a barrier.

Weak isotonic solutions of sodium fluoride are introduced on a pellet of cotton into the tooth cavity in 0.07 mg. amounts. After the root canal is filled a paste containing 0.35 mg. of NaF is placed in the cavity. In surface applications of fluorine to the dentin 0.012 gms. of NaF are used, ¼ entering the dental tissues and the remainder being removed. The paste adheres well to the tooth surface insuring against accidental dropping into the oral cavity. These doses are non-toxic.

Intact teeth absorb 3.6 to 6.7 mg. of fluorine per gram of tooth substance submerged in a 0.7 per cent NaF solution; carious teeth absorbing as much as 10 mg. per gram of tooth substance. About 50% of the absorbed fluorine forms an insoluble compound with tooth substance, fluorine *adsorbing* on the walls of dentinal tubules as well as on the surface of calcium. The rate of fluorine absorption is independent of the moisture content of the tooth.

These studies indicate that the leaving of 0.7% NaF paste in the tooth results in hardening of softened, carious dentin. The hardness of $CaCo_3$ is less than that of CaF_2.

Clinical observations have shown a hardening of softened dentin in caries during a period of several weeks under a 0.7% NaF paste. A thicker border layer of increased radiopacity was observed after fluorination of the root canel. Carious dentin, probably because of changes in its physical structure, absorbs more fluorine than sound dentin; in deep caries hypocalification stops the absorption of fluorine.

In pulps exposed by caries, sodium fluoride is not effective and mechanical and antiseptic treatment is still used. It is recommended that roots of teeth to be replanted, transplanted or implanted be treated to avoid resorption. In deciduous teeth fluorination is not used because of its retarding effect on the physiologic process of resorption.

The pain caused by operative procedures, erosion, abrasion, clasp, exposed gingival dentin and hypersensitive dentin in most cases can be eliminated by fluorin. As the tubule walls absorb fluorine the density of the crystals is increased

1 E. H. Lukomsky, Moscow, in *Jl. Dentl Research*, Dec.

and the lumen is narrowed. The result is not, strictly speaking, an anesthesia, but is production of an insulation.

The technic is rubbing in 17.2 mg. of a 75% NaF paste, ¼ of which is absorbed by the tooth. The excess paste is removed and in several hundred cases no necrosis of the pulp has resulted; nor has there been evidence of general intoxication from occasional swallowing of the paste. In periodontosis with marked alveolar atrophy, this treatment is contraindicated because of the prolonged pain.

In treatment of sensitive dentin in cavities, 31% NaF paste is used. In cases of deep caries not over 1% NaF is used because the superfluous fluorine does not combine with the thin layer of dentin. The paste is rubbed 2, 3 or more times and left in for 15 to 30 minutes. When the paste is applied externally the gingival area should be well washed and the tooth rinsed.

The technic of fluorine anesthesia during cavity preparation is simple and its efficiency is 95%. The treatment of hypersensitive dentin is effective and lasting.

An isotonic solution of NaF is used to wash the root canals after removal of their contents and white clay paste (0.7% NaF) is used for covering pulp stumps and filling canals. The cotton pellet applied into the canal is well saturated with the solution for a period of three minutes.

From thousands of dispensary cases surgical interference has been required in less than 2%. After the paste has been kept in the tooth for three months, degrees of rest ration of the gingival cervice and increased thickness of the alveolar bone in granulating periodontosis has been observed.

Two hundred cases of periodontosis were treated with sodium fluoride and in addition several hundred cases have been attended in dispensaries. All patients have been examined after a period of a month and 60 individuals during the following six to 12 months.

Remove the stains from the teeth and prescribe a 1% solution of pure sodium fluoride for 30 days, five drops t.i.d, with local treatment of pockets gave satisfactory results.

American dentists will await with interest further reports, and doubtless many will give the method careful trial and appraisal.

In 2 of 3 cases of brucellosis spondylitis destructive lesions of the spinal column were present, and in 1 the clinical signs and symptoms of acute spondylitis without any significant changes, were observed. All the patients made a recovery, with demonstrable repair of the bony lesions in 2 cases after a course of physically induced fever. —*Phalen et al.*, Mayo Clinic.

THERAPEUTICS

J. F. Nash, M. D., *Editor*, Saint Pauls, N. C.

TREATMENT OF HYPERTENSION

A good many cases of hypertension have been found to be curable by surgical operation. The great majority have to be managed more or less; they can not be cured. The following excerpts are from a more-than-ordinarily encouraging article.[1]

Many cases which formerly would have been called essential hypertension now can be classified as due to kidney disease. Chronic pyelonephritis and other causes of renal ischemia now are suspected more often and more frequently recognized.

Pyelonephritis is to be treated by urinary antiseptics. In an occasional case of unilateral pyelonephritis the diseased kidney may be removed and the hypertension cured.

Paroxysmal hypertension in infrequent cases can be cured by removal of an adrenal tumor.

In other than the rare case in which the cause can be removed, the treatment of hypertension can be planned by the employment of general and specific measures.

In patients with severe hypertension and in those having headache, dyspnea and vertigo bed rest is necessary. Moderately high blood pressure without symptoms calls for reassurance and the elimination of situations known to produce emotional stress. Sedatives are helpful in blunting emotional reactions.

Obesity requires weight reduction by food restriction. Restriction of protein, salt and water is not warranted. Coffee and alcohol in moderate quantities are not harmful. Excessive use of tobacco should be prohibited.

Hot baths and massage may produce some relaxation. Venesection may be the one measure which will relieve the hypertensive headache.

Potassium thiocyanate will lower blood pressure and relieve symptoms in at least 50% of cases of hypertension; 5 to 15 grains a day, best given as a solution of the powder in distilled water. Weekly determination of the blood thiocyanate should be done until the dosage necessary to maintain a blood level of from 6 to 10 mgms. per 100 c.c. is established. The drug may be given for years. Dermatitis and other toxic reactions are encountered occasionally.

Potassium iodide has been used by many physicians for years because in an occasional case striking reduction of b. p. occurs when it is given.

Veratrum viride in the emergencies of hypertension, the blood pressure can be reduced safely and markedly with this drug.

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1. M. G. Berry, Kansas City, in *Jl. Mo. Med. Assn.*, Mar.)

Nitrites are of little value. Estrogenic hormone should be given for its effect on nervous tension in hypertension associated with the menopause. Thyroid extract occasionally effective in young hypertensive patients. Extracts of liver and pancreas are of no value. Recently a potent depressor substance has been extracted from the kidney. The safety and effectiveness in humans of these extracts have not been proved.

DRUGS IN INTRACTABLE PAIN

No HUMANE doctor could practice medicine without analgesics. The following abstract has been made of an article by a humane doctor[1] who knows a lot about pain and its relief.

It is the primary concern of the physician to search out the origin of pain and remove it, if possible, before resorting to more drastic measures. Very often a few c.c. of procaine or alcohol, or the stroke of a knife, may relieve pain where all other methods are without avail.

The coal-tar derivatives (aminopyrine and the like), the salicylates, and more frequently cobra venom, fulfill the requirements well. Their analgesic effect as antirheumatics is in all probability due in part to a peripheral action in abolishing the source of pain. A much greater raising of the pain threshold is obtained with the opium alkaloids, alcohol, and subanesthetic concentrations of the gaseous narcotics.

Try smaller doses of the opiates. With doses in excess of 15 mg., some increase of pain relief occurs but not proportional, 30 mg. (gr. ½) of morphine produces the maximum elevation of the pain threshold which may be obtained in the normal individual with this drug.

With codeine the greatest pain relief is effected by 60 mg. of this drug. Doubling the dose does not elevate the threshold or even prolong the effect significantly. Codeine in any dosage will never be more than 50% as effective as morphine.

Individuals in very severe pain will tolerate much larger doses of these drugs. The intensity of the symptoms and signs of withdrawal are proportional to the total amount of the drugs administered. Also the quantity of morphine to control an acute and intense pain of short duration will subsequently exert a profound and possible toxic action when the pain stimulus subsides.

Pain, fear, apprehension cause a hypersecretion of the adrenal glands. All these factors render a patient more difficult to depress with any narcotic substance.

The peak of threshold-raising action with moderate doses of the opiates occurs in 30 to 90 minutes. Due to greater rapidity of absorption from subcutaneous areas peak is reached earlier and somewhat more rapidly with codeine and heroin than with morphine or dilaudid.

It is necessary to repeat 15 mg. of morphine q. 3 to 4 hours to maintain a reasonable action; with codeine 60 mg. every 90 to 120 minutes for similar effect, with dilaudid at 3-hour intervals. One mg. (1/60 gr.) of dilaudid is equivalent in action to 10 mg. (gr. 1/6) of morphine.

The peak is reached in 20 minutes after the intravenous administration of any of the commonly used opiates, the peak of narcotic action within 2 to 3 minutes. The patient suffering intolerable pain should be given the benefit of this method. Use dilute solutions administered slowly. The duration is significantly less.

In play or combat, sexual excitement, parturition, or in religious practices, pain is perceived, but the usual reaction, anxiety fear, flight or fight is not forthcoming.

Scopolamine has no effect on the pain threshold, but it reduces the psychic trauma so enhancing action of the opiates.

The barbiturates reduce mental acuity even more than the opiates, but may fail to relieve anxiety or alter the pain threshold. They may be useful in moderate pain as adjuvants to the salicylates. With a dose just sufficient to carry the patient to the borderline of consciousness, any painful stimulus may evoke flight or fight.

Morphine is the only drug which will control this type of reaction, but the summative depressant action of these two drugs, a barbituric and morphine, on respiration is often undesirable.

1. M. H. Seevers, Madison, in *Wisc. Med. J.*, Feb.

UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

CONSERVATION OF THE HYDRONEPHROTIC KIDNEY

DESPITE the remarkable progress of recent years in diagnosis and treatment of urological affections, a great many patients are seen today with kidneys badly damaged by obstruction at or near the ureteropelvic juncture. Probably one-third of these obstructions are caused by anomalous bloodvessels crossing the ureter; fibrosis and adhesive bands at the ureteropelvic juncture account for another large percentage; and nephroptosis is usually associated with, and is an important factor in, these lesions. When allowed to progress, the end result of all such obstructing lesions is the same—hydronephrosis with kidney damage.

Many hydronephrotic kidneys are needlessly sacrificed on account of inadequate diagnosis of

the causative lesion and failure to correct anatomical defects by proper surgical procedures.

This subject was well dealt with in our last Sectional meet.[1]

Treatment

Obstructions at the ureteropelvic outlet cause a number of more or less misleading symptoms. The patient, more often a woman, frequently has been the round of doctors and has had one or more abdominal operations. The main symptom is a feeling of discomfort, fullness or pain in the affected side which varies from a dull ache to severe attacks of renal colic. The affected side usually has a constant soreness or tenderness. Recurrent attacks of severe pain associated with fever frequently are seen. The pain is often worse after standing or after a long automobile ride. Abdominal gas, indigestion and nervousness are common.

Diagnosis

Diagnosis is simple if the symptoms are taken into account and a ureteropyelogram is made. It is well to suspect such obstructions in patients with long-standing pain in the kidney region. Ureteropyelograms should be made in the supine and the upright position. The best method for complete visualization of the ureter and pelvis is as follows: The ureteral catheter is inserted 4 or 5 cm. up the ureter and 15 per cent sodium iodide or 50 per cent skiodan injected. The mouth of the ureter is observed during the injection and the catheter is inserted farther if the medium runs back around the catheter. The injection is continued slowly and until the patient experiences slight pain or fullness in the side. The film is then made. Another film is made in the upright position, care being used to have the ureter and the pelvis slightly distended with the medium. Occasionally it has been found necessary to insert the catheter all the way into the pelvis and drain off the urine before injecting the medium. The important point is to obtain a ureterogram as well as a pyelogram and to make a picture with the patient upright and with the end of the catheter at least half-way down the ureter. Satisfactory pictures are not obtained when the catheter is all the way up the ureter. The catheter sometimes acts as a stylet and straightens the ureter, while the unsplinted ureterogram may show obstructing kinks. Failure to make a picture with the patient upright may prevent the nephroptosis from being seen, and the downward excursion of the kidney often plays a role of major importance in producing the obstruction. This is especially true of anomalous vessels or fixation of the upper ureter.

Treatment

When studies of the ureteropyelogram indicate that there is obstruction at the ureteropelvic juncture causing hydronephrosis or pain, an operation should be considered.

The operative procedure should be directed toward relief of the obstruction, removal of redundant pelvic sac, and fixation of the kidney when ptosis is present. The greatest single factor in the success of plastic reconstruction of the renal pelvis is adequate relief of the obstruction. Second in importance is prolonged drainage of the pelvis and splinting of the upper half of the ureter, best done by a combination nephrostomy drainage tube and ureteral splint. Reconstruction of the renal pelvis by cutting away the hydronephrotic sac is helpful in obtaining good anatomical and functional results.

The type of operation needed depends upon the nature of the obstructing lesion at the ureteropelvic juncture and the size of the hydronephrotic sac. The ureter is freed completely and all bands and adhesions are divided. Anomalous vessels usually should be divided unless by so doing more than 20 per cent of the kidney would be affected. Reimplantation of the ureter in front or behind the obstructing vessel is preferable to division of large arteries. As regards the narrowing at the ureteropelvic juncture, the *V* plasty or Schwyzer method of relieving obstruction is used when the shape of the pelvis and the obstruction lends itself to this type of procedure. The Heincke Mikulicz principle, first used by Fenger in ureteral strictures, has been successful in most instances in our hands. The fact that others report poor results with this method may be due to difference in pelvic drainage and ureteral splinting. Lateral anastomosis of the ureter with the pelvis is the plastic procedure of choice whenever the insertion of the ureter is high in the pelvis. Removal of the excess pelvic sac and suture of the edges has been carried out with good results. If the operation is unduly prolonged by this step it should be omitted, since good functional results have been obtained when no attempt was made to do more than relieve the obstruction.

Fixation of the kidney has been done almost routinely. A strip of lumbar fascia is plicated just under the capsule of the lower pole of the kidney. This holds the kidney up and tends to pull the lower pole outward, thus facilitating drainage of the pelvis. The drainage tube and ureteral splint are left in for two weeks or longer, depending upon the amount of infection present.

1. Ballenger, E. G., & McDonald, H., S. E. Section A. U. A., 1941.

Subacute Bacterial Endocarditis.—In spite of the remarkable progress which has been achieved in recent years in the treatment of various infections, subacute bacterial endocarditis continues to stalemate the therapeutic efforts of the medical profession.—*Willius.*

GENERAL PRACTICE

James L. Hamner, M.D., *Editor,* Mannboro, Va.

MANAGEMENT OF CHRONIC ARTHRITIS

With the information abstracted from this comprehensive article[1] any family doctor can take care of his patients with chronic arthritis at a great saving to their purses.

Chronic arthritis may be due to injury, gout and the definite infections: tuberculosis, gonorrhea and undulant fever. Sulfa preparations and fever cure most cases of gonorrheal rheumatism. Suitable diet can in a large measure prevent exacerbations of gout. Colchicum and the dangerous cinchophen are almost specific in relieving the acute manifestations.

Atrophic arthritis afflicts youths and young adults of the asthentic constitution, tends to anchylose in grotesque positions leading to the symptom of arthritis deformans; commonest in women. It often starts in the fingers implicating the wrists, ankles, feet and elbows symmetrically. The muscles atrophy and contract. The periarticular tendons and ligaments and joint capsules thicken. Even in a bed-fast victim x-rays may show no intraarticular changes. There is excess of synovial fluid, later destruction of cartilage and of the serous secreting membrane. The bones lose calcium; pokerback develops, radiculitis expressing itself as sciatic, intercostal or brachial neuralgia.

The patient wastes, looks and feels sick. Anemia of small-cell type; a low-grade fever; streptococci in the blood of many.

The patient must be told that he will be sick for months, that recurrences and set-backs are part of the usual course, that he should not expect too much from any one procedure. He must be assured that he has a good chance to get well. Much benefit results from meticulous care carried out for months. Those with less tendency to anchylosis are as likely to be freed of symptoms as patients with peptic ulcer or chronic gonorrhea.

Prolonged rest, partial casts or splints may be needed to maintain rest of involved parts. A mixture of acetylsalicylic acid and calcium glutamate in the stomach forms the very soluble active calcium acetylsalicylate, which does not irritate the gastrointestinal tract and gives prompter effect. It is usually well tolerated by patients intolerant to aspirin.

The best diet contains an abundance of minerals, vitamins B, C and D and roughage. Calories are sought in the fats. A high intake of meat and eggs is necessary to combat anemia and compensate for the rapid protein break-down.

Physical therapy is needed—with heat lamps or bakers, hot compresses, contrast baths; subacute or chronic arthritis of the extremities, wax baths of hands and feet. Fever therapy has proved of temporary benefit in a few stubborn cases. The patient must be coached in postural exercises and corrective foot exercises. Proper shoes are adjusted to the patient's needs by soft felt padding.

Short waves of high frequency are applied by means of the induction field utilizing a cable electrode.

Perhaps the best evidence for the causal connection of infected foci has been the exacerbation or intensification of symptoms ensuing after inopportune surgical disturbance of suspected foci. Tonsillectomy, tooth extraction, or prostatic massage are permitted only after the patient's general health has improved or joint manifestations have subsided.

Streptococcus vaccines properly made and intelligently used are an important aid in cases of infection. Vaccines may prevent the exacerbations occurring after removal of infectious foci; injected subcutaneously in subreaction doses they are superior to other foreign-protein therapy.

I have yet to see a patient respond favorably to gold injections after failing to benefit from safer methods.

Careful x-ray treatment often relieves symptoms of atrophic arthritis of the spine.

The patient with hypertrophic arthritis is usually past middle life, sthenic, has never been ill. Typists and pianists develop arthritic finger joints; miners arthritis of the spine; obese patients of the knees and lumbar spine. Charcot joints of tabes are hypertrophic arthritis due to trauma. A predilection for the large joints, often on one side; in the small joints Heberden's nodes in the terminal joints of women at the time of the climacteric. X-rays show erosion of the cartilaginous plates; the trabeculae about the joints are extra heavy; the cartilage is eroded until eburnated bone ends are approximated. Bony overgrowth and spasm due to pain may limit the motion of the osteoarthritic joints; but true anchylosis, as seen in the atrophic type, never develops.

Joints afflicted with hypertrophic arthritis have to be protected against trauma. The obese patients must reduce weight. Many of them are women in the menopause. These women irrespective of their basal metabolic readings frequently improve on thyroid. Estrogenic substances have failed consistently to benefit patients with arthritis, but have effectively removed the arthralgic complaints of the climacteric. Only second to the metabolic approach is the effectiveness of physical

1. E. F. Traut, Chicago, in *Ill. Med. Jl.,* Mar.

therapy in hypertrophic arthritis. Reassurance that invalidism with deformity is unlikely is of great help.

Patients presenting features common to the hypertrophic and to that subgroup of atrophic arthritis termed infectious make up most cases of chronic arthritis; and these have a better outlook for recovery than patients with classical atrophic or hypertrophic joint changes.

Fibrositis is a common complication of arthritis and like hypertrophic arthritis, affects especially overweight individuals past middle age. Lumbago is its commonest expression. Excluding arthritis, most pain about the neck and shoulder is due to fibrositis. Fibrositis responds well to heat and massage. Recently we have used acetylcholine (Mecholyl) with the galvanic current in fibrositic patients with brilliant results.

DERMATOLOGY

For this issue Ray O. Noojin, M.D.
Duke Hospital, Durham, N. C.

TINEA (PITYRIASIS) VERSICOLOR

Not infrequently during routine physical examinations the physician encounters the presence of "liver spots" over the chest and back of a patient. The laity often entertains the erroneous idea that the skin eruption is due to a faulty liver function. This dermatosis is a harmless, usually asymptomatic, parasitic disease of the skin due to the vegetable fungus, *Microsporon furfur.*

The lesions, usually yellowish-brown, slightly scaling macules, dime-size or less, are found on the trunk, particularly the chest, upper back and shoulders. They involve principally the outer layer of the stratum corneum. The patient may complain of localized pruritus, however not infrequently the lesions may have been present for years without giving enough discomfort to cause the patient to seek medical advice. Ordinarily there is no indication that localized inflammatory reaction has been provoked. Lesions are thought to be found more frequently on men between the ages of twenty and forty, particularly those who perspire freely.

Tinea versicolor may affect individuals of hygienic habits as well as those who devote little attention to individual cleanliness. The disease is said to disappear spontaneously in old age.

During the summer the lesions may be noted to be of lighter color than the surrounding skin. Oddly enough, the greater the exposure of the body to ultraviolet light, the more prominent the contrast becomes. The so-called pseudoachromia parasitica of tinea versicolor develops due to increased pigmentation in the surrounding skin. Some investigators contend that the fungi merely serve as a mechanical filter for the ultraviolet rays, whereas others maintain that in addition the fungi produce an actual biologic interference with the pigment-producing cells.

Diagnosis is usually easily and rapidly established by examining the branny scales scraped from the lesions. The scales are placed upon a glass side, 2-3 drops of 10% KOH are added, and a cover slip is placed upon the preparation. Moderate heating with a Bunsen burner hastens the clearing for microscopic study. Numerous spores and short, branched hyphae should be easily found because the lesions are almost pure cultures of the fungus. The grape-like clusters of spores are very characteristic. If they can not be found readily, another diagnosis should be considered. Examination with the Wood filter ultralight is a useful adjunct in finding concealed foci, as for example in the pubic region, because of the well known golden yellow or brown fluorescence produced by *Microsporon furfur.*

The macular syphiloderma, chloasma, vitilligo, drug eruptions, Addison's disease, pityriasis rosea and seborrheic dermatitis may occasionally be confused with this entity.

Treatment is simple, although prolonged. It should start with a warm bath, the lesions being scrubbed with a brush and yellow laundry soap. Afterward 25% aqueous solution of sodium hyposulfite (thiosulfate) is applied locally. Both bath and medication should be carried out twice daily. Other efficacious local medications include ½ strength Whitfield's ointment as well as 6% precipitated sulfur and 3% salicylic acid in white vaseline. To avoid recurrences treatment should be carried out for at least two weeks after the disease has apparently disappeared. Here again the Wood filter aids in finding recalcitrant foci. During this period bed-linen and underclothing should be thoroughly laundered at frequent intervals.

OPHTHALMOLOGY

Herbert C. Neblett, M. D., *Editor,* Charlotte, N. C.

SPECTACLES IN OUR ARMED FORCES IN WAR.

In anticipation of the aid to vision of our armed forces since our entrance into the present war, it has been the policy of the writer, since that time, to advise those among his patients who were going into the service and required glasses, to carry out the following practical suggestions in regard to them. It is obvious that these suggestions would

be especially applicable to the commissioned and non-commissioned personnel in combat service, in certain individuals in the technical branches, clerks and nurses, physicians, and in those 45 years old or older. If the war is prolonged and the need for more men becomes urgent to fill the ranks the standard of visual requirements for young and old for practically all branches will be lowered, and in consequence the number of men who will need glasses will be augmented and the efficiency of many of these men will be predicated upon the availability of a supply of glasses necessary to meet any individual emergency in any case where good vision is dependent upon the use of them.

Suggestion: (a)—That an extra pair of glasses is a necessary part of his physical equipment, particularly if in combat service on foreign detail, because in such a capacity should they be lost or broken immediate replacement would be impossible. This need is not absolute if stationed in the continental limits of the United States, but absolute in anticipation of assignment to foreign duty.

(b) That the extra pair be at all times a part of his personal equipment and kept in a stout case to insure against breakage. (c) That each prescription for lenses, including measurements for frames be given to patient and carefully preserved as an item of his personal equipment.

(d) That rimless glasses be strongly advised against because they are easily broken, more liable to injure the eyes if broken while being worn, and afford less protection to the eyes in the hazards of combat service.

(e) In using the rimmed or rigid frame, if a joint screw is lost and the lens falling out, it can be secured in place by the use of an ordinary pin or a small piece of wire—a simple expedient the writer saw resorted to on many occasions in Europe during World War I. This is not applicable to the rimless spectacle when the lens becomes broken at the joint. The break in the lens may be glued together, if glue is available or by adhesive tape, but neither is very stable.

(f) That for its simplicity and serviceability in an emergency the presbyope, with good distance vision, could have made and carry in his blouse pocket a monocle for the purpose of map reading, *et cetera*.

The oculist should suggest these points to this type of patient, since to the patient they are practical, economical and a safeguard to his eyes. Too, it is the writer's experience that for reasons best known to the patient, whatever they may be, the rimless type of frame is the choice of the majority of all ages regardless of their vocation or economic status with little knowledge or concern for their impracticability, the lack of serviceability and safety under many conditions where the rimmed or rigid frame would more nearly obviate these problems. Few, if any, applicants for glasses think of these practical points, but when they have been apprized of them they are keenly interested and for the most part subscribe to them.

NIGHT BLINDNESS IN SOLDIERS: A SIGN OF PSYCHONEUROSIS RATHER THAN OF AVITAMINOSIS

(W. C. Alvarez—Editorial in *Amer. Jl. Dig. Dis.*, Mar.)

Wittkower *et al.* studied a group of 52 soldiers when it was found that they became confused when sent out into the dark where they couldn't see well, and concluded that among normal persons a higher level of intelligence and education and a lower age are associated with superior adaptation to the work. In only one of the soldiers in the group could be found an ocular cause for the night blindness. In none of them could evidence be found of vitamin-A deficiency. The conclusion arrived at was that "most cases of night-blindness seen in this country are probably of psychologic origin. The value of dark-adaptation tests for the discovery of night-blind patients and as an indicator of vitamin-A deficiency appears doubtful.

INSURANCE MEDICINE

H. F. Starr, M.D., *Editor*, Greensboro, N. C.

THE PROGNOSTIC SIGNIFICANCE OF ACCENTUATION OF THE AORTIC SECOND SOUND IN HYPERTENSION

An analysis 2 to 11 years after examination of 175 consecutive cases of hypertension with systolic blood pressure of 160 and over and/or diastolic blood pressure of 100 and over, found on periodic health examinations suggests that accentuation of the aortic sound adds considerably to the gravity of the outlook.

It will be recalled that the relative intensity of the aortic second sound and the pulmonic second sound heard at the base of the heart normally depends upon the age of the individual. The pulmonic second sound is more intense in youth and the aortic second sound in old age. In middle life there is relatively little difference. In making the examinations, these physiological variations were kept in mind.

Accentuation of the aortic second sound was recorded in 47 individuals—27%—of the 175 cases of hypertension. Only one other condition, albuminuria, was found more frequently—32%—to be associated with hypertension.

Among the group of 47 hypertensive individuals with an accentuation of the aortic second sound, 19—40%—had died at the time of this study. Of those with the more commonly associated condition of albuminuria, 31.5% had died. Of the entire

group of 175 cases, 35—20%—had died. Thus the percentage of deaths among those with accentuation of the aortic second sound was twice that of the entire group.

The average age of the members of the group at the time of examination was 48 years. The average age at death was 54.3 years, and the average age at time of examination of those who died was 49.8 years.

What accounts for the very high mortality among hypertensive individuals with pathological accentuation of the aortic second sound? Hypertension from any cause, by throwing an increased amount of work on the left ventricle, tends to accentuate the loudness of the aortic second sound; yet in only 27% of the 175 cases of hypertension was the accentuation sufficient to be regarded as abnormal and worthy of record. In interpreting this sign, the personal equation of the examiner is undoubtedly an important factor. In nephritis and arteriosclerosis, particularly when there is sclerosis of the aortic arch, or when there is increased peripheral resistance and cardiac hypertrophy or aneurism, the loudness of the aortic second sound is apt to be increased. Any of these conditions associated with hypertension may be expected to add to the gravity of the prognosis. These conditions may not be demonstrable on physical examination, but if the result experienced in this group means anything, it means that pathological accentuation of the aortic second sound in a hypertensive individual is a decidedly unfavorable sign and calls for a thorough search for factors additional to this and the hypertension.

CARDIOLOGY

C. M. Gilmore, M.D., *Editor*, Greensboro, N. C.

INFLUENCE OF EXTRINSIC FACTORS ON THE CORONARY FLOW AND CLINICAL COURSE OF HEART DISEASE

We need to know all we can about pain under the breast bone. Here are some notes[1] in point.

The increased tendency to anginal pain following meals is a frequent phenomenon. Anginal pain is very frequent also in hiatus hernia, more apt to occur when the herniation is present. Anginal pain in these cases is due to a reflex vasoconstriction of the coronary arteries.

In a series of 107 cases of anginal pain followed in the last two years, in 44 patients examined röntgenologically, 18 (17%) showed a hiatus hernia. Anginal pain in hiatus hernia is *not angina-like*, it is *a real anginal pain* resulting from an insufficient blood supply to the heart muscle.

Attacks of angina pectoris associated with gallbladder disease have been reported by several; also with duodenal ulcer, spastic duodenal bulb, spastic colon, or diverticulosis of the colon.

Certain cases of heart block associated with pulmonary emboli would indicate vagal stimulation by the embolus; a constriction of the pulmonary vessels, and of the bronchi, associated with pulmonary embolism has been shown.

Some consider that such coronary vasoconstriction is the cause of death in many cases of pulmonary embolism, and that death is not always due to asphyxiation or right-heart failure or incomplete venous return to the heart. Acting upon this hypothesis, and treating cases with atropine and papaverine, or atropine and aminophylline intravenously, resulted in a decrease in the death rate in their cases of pulmonary embolism from 82 to 13%.

When a coronary of a dog is ligated, there is a reflex vasoconstriction of the other coronary vessels. When a coronary artery of the dog was ligated under full anesthesia, there was a very low mortality; but if the ligature were placed about the vessels under full anesthesia and not tied until several hours later, after recovery from the anesthetic, there was a very high mortality. But if the vagi were cut, or atropine administered, before the artery was ligated in the unanesthetized dog, the mortality remained at the same low level as when the artery was tied in a dog in which the reflexes were abolished by full anesthesia.

Making use of these observations, we have very greatly reduced our mortality in early cases of coronary thrombosis, by the immediate administration of atropine and aminophylline. In addition, it must follow that if this secondary vasoconstriction was obviated, the infarct would be smaller and the myocardial damage less, with a better recovery and less loss of function. Recovery has been more rapid and more uneventful in our cases than previously.

It has been long known that the pulse rate could be slowed by stimulation of the nasal mucous membrane in animals, and that this effect could still be obtained by the same stimulation after vagotomy or atropine, or both.

A possible explanation of the attacks of angina pectoris which occur when an anginous subject suddenly breathes cold air through the nose. Such attacks may even be fatal.

When experiments were done upon anginous subjects, inducing anginal pain by means of breathing a mixture low in oxygen, the pain was found to appear much sooner if ergotamine were adminis-

1. N. C. Gilbert, Northwestern Univ. Med. School, in *Bul. N. Y. Acad. of Med.*, Feb.

tered before starting the experiment.

Recently a series of cases was reported with what would seem very clear evidence that the anginal attacks were caused by a vasomotor narrowing of the coronary arteries, precipitated by smoking. In two cases of electrocardiographic changes did not occur after atropine.

Stimulation of the vagus, continued over several months, produced changes in the heart muscle of the dog comparable to chronic clinical degenerative changes in man.

In hearts, with a blood supply already insufficient, or barely sufficient, and possibly with intrinsic vascular changes, a further restriction of coronary flow because of extrinsic factors may produce serious changes much more rapidly and much more certainly than in a normal heart.

INTERNAL MEDICINE

GEORGE R. WILKINSON, M. D., *Editor*, Greenville, S. C.

PRACTICAL TREATMENT OF THE COMMON NEUROSES

IT IS BELIEVED that advice and instruction such as Dr. Yaskin[1] gives will prove serviceable in home and office practice.

The concept of a neurosis as a clinical entity is necessary for diagnosis and successful treatment. Anxiety is the central symptom of nearly all the neuroses and psychoneuroses.

A given group of symptoms (such as cardiac or gastrointestinal) is only a conspicuous part of the total neurosis.

Probably the most important idea in the treatment is that the patient must feel that the physician sympathizes with him, has a clear formulation of his case and has the ability to help him. The physician must not be hasty in arriving at formulations, but once he makes up his mind he must remain firm in his statements, betray no doubts or indecisions and above all be frank (sic) and truthful.

The history should be complete and should be recorded at once. The patient should be given ample time to tell his story even if repeated visits are necessary. The physical examination should be complete, with necessary laboratory procedures, at times some special examinations, even though the clinician's judgment does not warrant such procedures. Once the physical investigations are completed and found negative, reëxaminations are inadvisable since they unsettle the patient.

At this point the physician is in a position to inform the patient that his symptoms are not due to physical causes and to emphasize that his complaints are due to other causes which are in need of treatment. It may be necessary to state that absence of physical causes does not mean that the patient is insane or that he "imagines" his symptoms. The patient must thoroughly understand that he must actively help the physician in the treatment.

The patient is next given the general statement that his individual symptoms will receive treatment just as cough and pain in pneumonia would be treated, but that the success of the treatment will depend upon tracing and correcting unusual attitudes and reactions of the personality; bringing into conscious attention unwholesome attitudes associated with irritating memories. Much information will be given by the patient when he is permitted to talk freely in direct interviews, bringing out in the open all possible experiences and phantasies which might have been causing him difficulties, consciously or unconsciously.

Procure from outside sources all possible information regarding the experiences and reactions of the patient, and the circumstances in which he lives.

Desensitization consists in removing by intellectual discussion the unpleasantnesses attached to the memories. The patient is encouraged to face openly the unpleasant experiences and memories. These must be brought into consciousness repeatedly by direct interviews or by the free-association methods.

Desensitization should be gradual, avoiding wounding the pride.

Leave patients with some formulation at the end of each treatment period.

By persistent conscious effort guide the patient to react in an efficient, wholesome manner to various life stresses.

It is often necessary to desensitize the various members of the family to the patient's illness and reëducate them into new modes of response toward each other and toward the patient.

Focal infections play no role in the fundamental psychopathology of neurosis.

Explain how anxiety may give rise to tachycardia, vomiting, frequent stools, cough, etc.

Rest in bed must be enforced for from a day or two to four weeks. Prior elimination is essential.

The psychoneurotic, unlike the maniac-depressive individual, is apt to become a drug addict. Nevertheless, in the early acute stages somnifacients at night and sedatives through the day are almost indispensable.

There may be episodic occurence of anxiety, accompanied by palpitation, trembling, sweating

1. J. C. Yaskin, Univ. of Penn., in *Med. Annals D. C.*, Jan.

and general weakness, and by complete or nearly complete freedom from symptoms between attacks.

The most common precipitating causes of neuroses are unsatisfactory sexual experiences or threats to economic or social security.

The treatment of anxiety neurosis is usually satisfactory. When the cause cannot be removed, the patient must develop new interests and recreational outlets, and in some cases compromise formations.

In conversion hysteria there is always a motive either to obtain something otherwise unobtainable or to escape a situation which is unbearable.

For the treatment of the common neuroses the physician must devote considerable time. He must acquire a few fundamental principles in psychopathology to have a clear formulation of the problems in the individual patient, and a few therapeutic procedures applicable to most of the neuroses and special procedures in the treatment of some types of neuroses and symptoms. What *not to do* in the treatment of neurosis is also very important.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

PITFALLS IN ABDOMINAL DIAGNOSIS

ALL OF US want to escaped the reproach of getting our patients to the surgeon too late. We have to be on guard, too, against having them operated on unnecessarily and to their detriment. Here's[1] help.

In the course of general infections with bacteremia, we may find *enlargement of the spleen* with more or less sharp pain in the left hypochondrium or left iliac fossa, nausea, vomiting and fever. Bacteria in the blood culture clears up the case.

One of the less common modes of onset of *rheumatic fever* is with severe generalized abdominal pain, not at all unlike the onset of an attack of acute appendicitis. Temperature and white blood count are elevated, abdomen rigid and tender.

A history of asthma, urticaria or eczema must lead one to suspect *allergy* when acute abdominal syndrome is encountered.

The gastric crises of *tabes* have often been mistaken for organic abdominal disease. The testing of knee jerks and pupillary reflexes is of prime importance.

Generalized arterial disease sometimes begins with abdominal cramps.

In *coronary insufficiency or thrombosis,* the anginal syndrome may be initiated with epigastric or right hypochondriac, rather than precordial, pain. The coexistence of coronary artery disease and cholelithiasis is not uncommon.

bolization is a common accident. This is also the case in *subacute bacterial endocarditis.* The spleen, kidneys and mesenteric vessels are favorite sites.

In *mitral stenosis with auricular fibrillation,* em-

Pericarditis, rheumatic or tuberculous, at times gives only sharp epigastric pain, radiating through to the back. In young adults, any prolonged duration of gastric symptoms should occasion a suspicion of pulmonary tuberculosis.

In *lobar pneumonia,* right lower, with coexisting diaphragmatic pleurisy, spasm is transmitted to the abdominal muscles, giving rise to pain, tenderness and rigidity in the right iliac fossa. Observation an hour or two will generally direct attention to the chest.

Jaundice with fever and without pain always brings up the question of hepatitis as against lesions in the biliary tract or pancreas. In hospitals all jaundice cases, except those immediately operative, should be admitted to medical wards.

In any case of diarrhea three simple procedures are often overlooked, namely: 1) the examination of gastric contents for anacidity; 2) the careful inspection of the anus and lower rectum for small ulcerated or infected areas and the examination of the stool for worms. Any of these findings may clear up a case that had previously had x-ray examination and remained a puzzle.

No diagnosis of a mass in the hypogastrium should be attempted until one is certain that the bladder is empty.

Root pains caused by spinal cord conditions or by pressure of osteophytes in the spine may radiate to the upper or lower abdomen and simulate cholecystitis or appendicitis. The absence of fever and the e'icitation of pain by spinal pressure are helpful.

Herpes zoster of the ilioinguinal nerve is easily mistaken for an acute appendicitis if the vesicles are not yet present. *Unruptured graafian follicles* have been repeatedly mistaken for appendicitis—especially an appendix located in the pelvis. The proximity to a menstrual period and the lack of muscular rigidity should put us on our guard.

DIVERTICULITIS OF THE COLON A MEDICAL DISEASE

MANY CIRCUMSTANCES—one of the chief among them the silly, catchy term, *left-sided appendicitis*—have combined to cause patients with diverticulitis to be seriously mismanaged. Very welcome and helpful is the highly intelligent article by an Asheville internist,[1] which is herewith abstracted:

1. Daniel Poll, New York, in *Med. Rec.,* Feb. 4th.

1. W. R. Johnson, Asheville, in *Buncombe Co. Med. Soc. Bul.,* Apr.

Unfortunately for the patient, diverticulitis is sometimes treated as a surgical condition when it is wholly a medical disease. The condition becomes surgical only when it is complicated by complete obstruction, perforation or abscess. Since these complications are not exceedingly common and often occur late in the course of improperly treated simple acute diverticulitis, it is of the utmost importance that the true medical nature of the condition be understood.

A diverticulum, an out-pouching of the lumen of the gut through a defect in the muscular layer of the bowel, may occur at any level of the bowel, but the vast majority are on the descending colon and sigmoid. They begin to make their appearance during the fourth decade of life and are more common in the obese and constipated people. They vary in number from one to several hundred and should be looked upon only as anomalies unless they become inflamed.

The symptoms of diverticulitis may be little more than tenderness and slight cramping pain in the left lower abdomen, or there may be severe pain, tenderness, rigidity, tumefaction, obstipation, fever, leukocytosis, nausea and vomiting. It is wise, when one is confronted with such symptoms in a person of middle age, to *keep the possibility of diverticulitis in mind,* because operation can usually be avoided if energetic medical treatment is instituted immediately. On the other hand volvulus, appendicitis, infected cancer or ovarian cyst with twisted pedicle may give almost identical symptoms, and differential diagnosis may be difficult.

Acute diverticulitis will usually subside promptly and completely if adequate medical treatment is given. This condition does not lend itself to clamping, resection and inversion of the stump, so satisfactory in dealing with appendicitis. The bowel wall adjacent to an infected diverticulum is usually inflamed, edematous and friable. Stitches often fail to hold in such tissue, and if they give way, peritonitis, local abscess or fecal fistula is almost sure to supervene. Most surgeons of wide experience encountering acute diverticulitis during an exploratory operation, close the abdomen immediately, with or without drainage.

Most patients should be informed of the presence of diverticula unless there is real danger of establishing a "diverticulitis phobia," in which case some responsible relative may be taken into confidence. They should be told that diverticula are harmless and without symptoms unless they become infected, and that infection can be avoided if normal bowel habits are established and gross roughage is eliminated from the diet. If, in spite of these precautions, abdominal pain and tenderness develop, the patient should remember, especially if he is away from home, to tell his doctor that he has diverticula in the colon. This may save him from an unnecessary and dangerous exploratory operation.

When inflammation of a diverticulum occurs, usually there is a history of increasing constipation for a few days, together with more or less pain or tenderness in the left lower abdomen, in the midline or even in the right lower quadrant if a portion of the sigmoid is located on that side. In majority of instances the left lower quadrant location of distress aids in localizing the lesion to the sigmoid. There may be neither leukocytosis nor fever. A palpable mass is uncommon. A careful barium enema study usually makes the diagnosis. The patient should be put to bed with continuous hot stupes to the lower abdomen. The diet should be liquid and non-residue in type. Cautiously administered hot saline rectal irrigations, and antispasmodics if needed are almost invariably followed by rapid subsidence of symptoms, but treatment should be continued for several weeks to give the inflamed bowel a chance to heal completely. A bland, low-residue diet should be prescribed and the dangers of bran, seeds, skins, popcorn and coarse cellulose fibers pointed out. The establishment of normal bowel functions is of the utmost importance. Retention enemas of mineral or olive oil at bedtitme are helpful. Such oils may also be taken by mouth. Some prescribe a tablespoonful of barium once or twice a week with the idea of keeping the diverticula filled with this non-irritating material. A mixture of belladonna, hyoscyamus and phenobarbital often is of value. The patient must be impressed with the necessity for prompt medical attention should constipation, tenderness or pain recur. If these patients can be made to realize that prompt treatment of early acute diverticulitis may save them from serious complications, they are more inclined to coöperate than if they are simply given a diet list.

In chronic inflammatory infiltration of the bowel wall adjacent to the infected diverticulum develops, symptoms are increasing constipation, pain during defecation, and constant tenderness in the left lower quadrant. A tender mass can be felt by abdominal or rectal examination. During an acute exacerbation of symptoms there may be fever and leukocytosis. Differentiation from carcinoma may be difficult. Barium enema examination reveals the filling defect much longer than in the case with carcinoma, the defect fading out gradually into normal bowel at either end instead of a sharp demarcation between normal and abnormal bowel as with cancer. The history of repeated episodes of left lower abdominal pain and tenderness, to-

gether with bowel irregularity over a period of months or years, is suggestive of diverticulitis. Proctoscopic examination may be of value if it reveals normal mucosa in a gradually contracting lumen.

Treatment of this stage of diverticulitis should be essentially the same as that for simple diverticulitis with enterospasm. It is desirable to continue treatment for several weeks after the symptoms and findings have subsided.

Obstruction demands the use of the Miller-Abbott tube. If response is inadequate, the surgeon must decide the optimum time for operation.

TREATMENT OF RINGWORM OF THE FEET

THE ESSAYIST tells us that one of several fungi cause the condition, prone to infect between the toes or on the soles, and that the causative organisms are destroyed at 104° F.[1] Dryness is inimical to their growth.

By no means are all vesicular eruptions of the feet ringworm. Immersion of the scales in 20-30% KOH for ½-1 hour will usually demonstrate the fungi. Gentle heating of the slide will hasten the solution of keratin. The botttom surface of the roof of a vesicle is a good place to look. The hyphae show up as regular, branching, tubular structures.

Some individuals never develop the infection, no matter how often they are exposed; while others very readily contract it in spite of all precautions. Drying powders with various antiseptics are of value in prevention; aerated shoes help allow evaporation of the moisture, and antisepticized hose may be of value. Tanks of sodium hydrochloride (0.5-1%) soaks for the feet before entering public showers, are not as successful as had been hoped. The solution must be made fresh each day, and individuals forced to *stand in the solution for one or two minutes.* Those who frequently contract the infection will do well to apply one of the fungicidal agents once or twice a week even when no sign of infection can be seen. This is best done after bathing. Thorough drying is also important. A powder containing 1-2% thymol serves well for this purpose.

Secondary invasion with pyogenic organisms is often severe enough to destroy the fungus. No fungicidal agent is to be used at this stage.

For secondary infection hot packs of aluminum acetate, boric acid, or a weak copper sulfate solution are often efficacious. Ammoniated mercury sparingly and rarely, 3% in white vaseline with 10-20% zinc oxide to take up the moisture.

After the inflammation has subsided, benzoic acid in 5% strength with 3% salicylic acid in white vaseline with 1% thymol; or 1-1000 bichloride of mercury and 3% resorcin in alcohol. Acetic acid in 3-10% strength is a neglected fungicidal agent. Iodine in various fat solvents is one of the best.

One person responds well to a drug while another responds poorly to it, so it is often necessary to shift from one to another.

It would appear to be a very simple matter to heat the superfices of the feet to 104° F. or even to 120°. However, it appears that more complicated measures are required. The concluding statement is one with which most of us who have had experience of this common condition will agree. On the whole, the article is encouraging and promising.

[1] R. L. Kile, Cincinnati, in *Ohio State Med. Jl,* April

TUBERCULOSIS

J. DONNELLY, M. D., *Editor,* Charlotte, N. C.

EXTRAPULMONARY NON-TUBERCULOUS CONDITIONS COMPLICATING PULMONARY TUBERCULOSIS

IT IS THE CUSTOM of most of the laity, and of some physicians, to blame every complication in a patient afflicted with pulmonary tuberculosis on the original pulmonary infection. Any tuberculous patient may become infected by any other disease germs. Infection with tubercle bacilli does not confer immunity to other pathological conditions; in fact, not even to infection with other tubercle bacilli. Complicating conditions of pulmonary tuberculosis may be tuberculous or non-tuberculous.

In minimal and in arrested tuberculosis extrapulmonary tuberculous complications are rare. Very frequently wrong diagnoses of intestinal tuberculosis or tuberculous laryngitis are made because the patients at the time happen to have an active tuberculous process in the lungs.

In the April issue of *Diseases of the Chest,* Eugene Rosenman discusses this question and uses the histories of three cases to illustrate his points. This doctor states that extrapulmonary tuberculosis not secondary to a pulmonary focus is rare, the only exception being certain cases of bone and joint tuberculosis, a condition apt to be due to the bovine bacillus.

Secondary lesions may be active or latent, and either of the so-called childhood type, or the secondary reinfection (adult) type. The primary focus may heal, while the extrapulmonary lesion may become active, and may exhibit the only evidence of active tuberculosis in the body. The author says that this occurs in cases of genitourinary

tuberculosis, and in some cases of human-bacillus bone tuberculosis. The tuberculous infection in such cases has probably taken place by direct contact with infected sputum or by blood or lymph metastasis. Those caused by blood metastasis are often associated with general activity and spread of the pulmonary process, and rarely offer diagnostic difficulties. However, those resulting from direct contact with infected sputum—such as tuberculous laryngitis, enteritis and tuberculous peritonitis (usually secondary to tuberculous enteritis)—often are of difficult diagnosis. Of these latter conditions, intestinal tuberculosis is the most difficult problem because: (1) many diseases inside and outside the abdominal cavity cause intestinal symptoms; (2) disordered digestion and intestinal symptoms are common in patients with pulmonary tuberculosis because of the toxemia; and (3) intestinal tuberculosis is the most common extrapulmonary tuberculous complication. Whether the number of tubercle bacilli present in the sputum, or the length of the period of contact with the intestinal mucosa is the main factor in the production of intestinal tuberculosis is a question, but it is agreed that tubercle bacilli must be *in the sputum* to cause the intestinal infection. Also, in minimal cases it is rare for tuberculous enteritis to develop. The author quotes the figures of Lawrason Brown, who reported 575 cases of secondary intestinal tuberculosis, only 9 of them in patients with minimal disease. In this same series of cases, 291 occurred among patients with moderately advanced disease, and 275 in the far-advanced group.

The presence or absence of active pulmonary tuberculosis is the most important point in the differential diagnosis in many of these cases. Certainly, if the patient has a healed tuberculous lesion, or an active minimal lesion, the physician is justified in assuming that the complicating condition is non-tuberculous. The author contends that the great majority of extrapulmonary tuberculous infections, except for rare cases of primary extrapulmonary tuberculosis and the few cases in which the infection has taken place during the primary phase, are secondary to active pulmonary tuberculosis; also that when a patient having a healed pulmonary tuberculous lesion develops an extrapulmonary complication, this complication is very probably non-tuberculous.

Two short case histories he reports:

Case 1.—A woman, 40, admitted to sanatorium Sept. 25th, 1935, because of diarrhea, vomiting and loss of 35 pounds in 2 years. The case had been studied in another hospital where x-ray examination of chest revealed "a healed tuberculosis in left upper lobe," and an exploratory laparotomy, according to surgeon's report, revealed "tubercular enteritis involving the lower ileum." Patient was much emaciated (weight 89). Physical examination was essentially negative. X-ray examination of chest revealed several small nodules in the third, left, anterior interspace, apparently healed tuberculosis. No sputum available. Feces negative for tubercle bacilli. Mild microcytic anemia, and erythrocyte sedimentation rate 41 mm. in 1 hour. X-rays with barium progress meal showed spasm of terminal ileum. Clinical diagnosis of non-specific ileitis made. Exploratory laparotomy showed thickening of terminal ileum for two feet, and proximal dilatation of small bowel, indicating partial obstruction. No nodules on peritoneum, and no evidence of tuberculosis. Microscopic examination showed regional ileitis of unknown non-specific origin. Terminal ileum was resected, and patient made an uneventful recovery. Patient well and working in 1939.

Case 2.—A man, 44, transferred to sanatorium from another hospital March 30th, 1935, with diagnosis of tuberculosis of cecum. Complaints, severe cramp-like abdominal pain unrelated to time or kind of food intake, anorexia, loss of 20 pounds in 6 months, chills, fever of 102°. On admission, patient was acutely ill and cachetic, weighed 100, abdomen distended but soft, no masses palpable. Physical examination otherwise negative. X-ray examination of chest revealed several clacified nodules in apices of both lungs. Hemoglobin was 56 per cent, erythrocytes three million, leucocytes including differential normal, sedimentation rate 19 mm. in 1 hour. Sputum negative for tubercle bacilli, Widal negative. X-ray examination of gastrointestinal tract with barium meal showed some obstruction in cecal region. There followed a short stormy course with chills and fever of 102°, rapid loss of weight, recurring attacks of diarrhea, and death on April 24th, 1935, less than one month after admission. Autopsy revealed healed tuberculosis of apex of right lung; primary scirrhous carcinoma simplex of the head of the pancreas with metastases into the retroperitoneal lymph glands and the spleen; and a few annular ulcerations in the lower duodenum and uper jejunum, probably from tumor infarction. No lesions found in the colon, cecum or lower ileum. The author notes that the true localization of the malignancy in this case was difficult, because the patient had no jaundice or pain and tenderness in the upper abdominal quadrant.

EQUALITY?—Hall

(From P. 270)

Democracy and equality constitute pleasant political pabulation. In a government founded and functioning upon the delusion of the people that it is fabricated and operated by them, democracy and equality become linguistic necessities. When Thomas Jefferson penned the statement that all of us mortals always have been and always will be equal, his own sustenance was being provided by slaves, owned by him. The intellectuals of Greece, in her Golden Days, from whom we derive much of our democratic philosophy, were supported by slaves conquered in battle. Equality, even identity, in Nature exist probably only as delusional concepts. It is a hard world. We might as well look it in the face.

MORTALITY in operations on patients with valvular heart disease, without congestive failure is little, if any, above that for operations on patients with normal hearts.—*Wood,* of the University of Virginia.

PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor*, Greenville, N. C.

MILESTONES IN NORTH CAROLINA PUBLIC HEALTH

(Continued from last month)

1919—The general Assembly passed the following important health legislation: Chapter 71, entitled "An act to prevent the spread of disease from insanitary privies"; Chapter 192, entitled "An act to provide for the physical examination and treatment of the school children of the state at regular intervals"; Chapter 206, entitled "An act for the prevention of venereal diseases"; Chapter 213, entitled "An act to require the provision of adequate sanitary equipment for public schools"; Chapter 214, entitled "An act to obtain reports of persons infected with venereal diseases"; Chapter 215, entitled "An act to amend Chapter 671, Public-Local Laws of 1913, relating to the injunction and abatement of certain nuisances."

The Bureau of Engineering and Inspection was organized in April.

In September Mrs. Kate Brew Vaughan, Director of the Bureau of Infant Hygiene, resigned. The bureau was reorganized under an understanding with the American Red Cross and was enlarged to include, in addition to infant hygiene, the problem of public health nursing, the name of the bureau being changed to that of Bureau of Public Health Nursing and Infant Hygiene. Under the agreement with the Red Cross this bureau was to have an available appropriation of $12,000 a year, half of which was to be furnished by the American Red Cross and half by the State Board of Health.

The typhoid campaign carried on during the summer through previous years was continued in the summer of 1919, using third-year medical students, furnished either with automobile or motorcycles for getting about. Campaigns were carried out in the following counties: Bertie, Cabarrus, Chatham, Chowan, Columbus, Craven, Hertford, Iredell, Johnston, Lincoln, Onslow, Pasquotank, Perquimans, Randolph, Richmond, Rockingham, Stanly, Union, Warren, Wayne. A total of 49,076 were given complete vaccination.

The educational work of the Board consisted of the publication of 48,000 monthly editions of the Bulletin, and the distribution of about 350,000 pieces of public health literature.

The funds available during the fiscal year amounted to $198,549.14, of which $102,301.98 was from state appropriations and the remainder from outside sources.

The appropriation for the State Laboratory of Hygiene for this year was $28,500; in addition to this, the Laboratory collected in fees for special work, for antitoxin, water taxes, etc., a total of $14,344.02, making a total of $42,844.02 available for work of the Laboratory.

(To be continued)

RHINO-OTO-LARYNGOLOGY

CLAY W. EVATT, M.D., *Editor*, Charleston, S. C.

INJURIES OF THE NOSE

CAREFUL subcuticular suturing is used more and more by plastic surgeons. Badly contaminated wounds should be insufflated with powdered sulfanilamide before suturing. Loss of nasal skin should be restored by immediate skin-grafting unless the wound is so contaminated that cleansing is impossible, or a surface of bone is exposed that cannot be covered by subcutaneous tissues. Full-thickness grafts from the postauricular region should be sutured in position under slight tension and maintained under moderate pressure by dental wax, a compound splint or a metal splint. The dressings should be left undisturbed for a week or 10 days unless the need for more efficient stabilization or pressure seems indicated. These and a good many more important details are abstracted from an excellent article.[1]

Initial swelling of the adjacent soft tissues may disguise fractures.

Any subperichondrial elevation of the septal mucosa by hemorrhage should be evacuated to avoid infection, abscess formation and destruction of the septal cartilage.

Pain is rarely severe, and manipulation of the nose may elicit but moderate tenderness.

Hemorrhage is controlled by tampons or packing for a few minutes to 24 hours. External pressure is made by a molded splint, hematoma incised and evacuated.

Pain of any consequence may be controlled by aspirin or codeine. The patient should not blow his nose as air might be blown through lacerations

1. C. W. Waldron, Minneapolis, in *Minn. Med.*, April,

to produce an infected emphysema of the nose or cheek.

Unilateral depression of the nasal bridge if not diagnosed during the period of swelling, becomes apparent when the swelling subsides after a few days. There is still ample time for successful elevation of the depressed fragments; use 10 or 20% solution on cotton on fine metal applicators. A slightly curved blunt elevator is then inserted high up in the nose. Slightly overcorrect the deformity, and hold fragments in position with a small high pack of one-half inch iodoform gauze well lubricated with an anesthetic antiseptic ointment, changed every day until the fragments maintain their proper position. An external splint of brass or aluminum lined with outing flannel or moleskin adhesive protects externally.

Lateral deviations of the bridge require repositioning of fragments by pressure of the thumb on the convex side and a blunt elevator within the nasal cavity; inject novocaine along the lateral borders of the nose and apply cocaine and adrenalin to septum and adjacent parts. The septum tends to spring back to its former displaced position; intranasal splinting or packing on this side (changed daily) until the septum will remain in position. Slightly overcorrect. In most cases some form of rigid splint should be employed.

Dental impression compound may be slightly softened in hot water and moulded over the repositioned nose, trimmed and reapplied with adhesive tape. Some cases require splints of soft metals or of aluminum or brass, lined with outing flannel held by adhesive.

In cases of comminution of the nasal bones and nasal processes of the maxilla with extreme depression of the fractured parts, postpone attempts to reposition the bridge for at least 10 days to lessen chance of meningitis developing.

Fracture of the nasal septum may occur with internal deformity, with external deformity, or both. Replace and hold by packing. If it recurs, plastic correction is in order to improve the breathing space and appearance.

HOSPITALS

R. B. Davis, M.D., *Editor*, Greensboro, N. C.

THE PREVENTION AND CONTROL OF SURGICAL INFECTIONS IN A GENERAL HOSPITAL

When everyone who enters the operating room —nurses, orderlies and visitors—carefully masks, wound infections due to the hemolytic streptococcus practically disappear. Of equal importance is routine cultures of the nose and throat of surgeons, house officers, nurses and orderlies, and particularly during the winter months. Recently we[1] had for a month to banish one of our staff from the operating room until he could get rid of streptococci he was carrying in his throat. The patient with a large open wound can be easily infected and reinfected when dressings are changed. In no case is this more important than in patients with extensive burns. Every visitor present should be masked as carefully as the surgeon.

As we came to use nothing but soap and water in the preparation of patients with compound wounds, and the incidence of healing by primary union and without suppuration and sinus formation steadily increased, it was a logical step to the preparation of surgical patients without open wounds by the same method; and since 1935 we have employed only soap and water in preparation of all surgical patients except thyroid patients. Conservation of every moment of time is an important factor for these patients.

1500 Consecutive Surgical Cases, Closed Without Drainage

	No. of Cases	No. Healing by Primary Union	Per Cent
Iodine and alcohol.....	717	635	88.56
Picric acid 5% in 50% alcohol	516	465	90.00
Soap and water	267	245	91.76

879 Cases of Appendicitis, Closed without Drainage

Preparation of operative field	No. of Cases	No. Healing by Primary Union	Per Cent
No record	42	40	.....
Iodine and alcohol.....	428	415	96.96
Ether, iodine and alcohol	35	34	97.1
Picric acid	193	191	98.96
Soap and water.....	181	180	99.44

Without exception at the Cook County Hospital the use of soap and water must be included in the preparation of all surgical patients.

For more than five years we have not used catgut in any clean cases or in any cases of compound injury in which wound closure has been carried out.

The larger the size of the catgut the more intense is the reaction from burying it in the body tissues; the larger the catgut the more quickly does it disintegrate and the more likely is it to give way when used to approximate tissues under tension.

Possibly cotton and stainless steel wire may have advantages that silk does not possess; silk has been so satisfactory that we are unwilling to substitute any other suture material.

In no case that has come to my attention in which an effort was made to trace the source of

1. S. L. Koch, Chicago, in *Jl. Kansas Med. Soc.*, Jan.

wound infection has contamination of the operating room supplies been demonstrated.

Once infection has developed in a surgical case we must determine:

First, is the infection rapidly spreading or localized?; second, if localized in what anatomical planes or structures?; third, what is the character and type of the causative organism?

High fever, chills, prostration, diffuse pain, tenderness and induration, a red blush and red streaks extending proximally—all speak for a virulent spreading infection that demands conservative treatment and forbids surgical incision; a low or falling leucocyte count is grave.

Massive warm wet dressings, absolute rest, one or two x-ray treatments that combined fall short of an erythema dose, and maximum intake of fluid to dilute toxins and provide maximum elimination are all of importance. Chemotherapy of invaluable aid.

Certain types of infection are not susceptible to sulfanilamide and its derivatives. Certain individuals cannot tolerate these drugs; in certain others the phagocytic activity of the leucocytes is low and in such a case the transfusion of blood from one who has had even a mild streptococcus infection can stimulate phagocytic activity and save life.

In a case of localized infection—adequate incision, drainage, and cleanly surgical care that does not permit adding further infection to the open wound.

In three types of infection that are frequently unrecognized, there is long-delayed healing or complete failure of response:

1) Infections due to the anaerobic hemolytic streptococcus; 2) Infections due to a symbiosis of organisms as of the hemolytic and the nonhemolytic streptococcus; 3) Infections in which the spirocheta pallidum has been inoculated with pyogenic organisms and remains long unsuspected as the major cause of trouble.

If an infected wound does not show prompt improvement with simple, cleanly surgical care cultures should be made of the wound secretion on both aerobic and anaerobic media. Once the exact nature of the infection is determined treatment becomes a matter of scientific accuracy rather than of uncertainty.

The most important principle in the care of every infected wound is not to add further infection. Masked faces, sterile instruments, surgical cleanliness, gloved hands are important—and most important of all is a serious determination not to omit any detail of cleanly care that will help to hasten recovery.

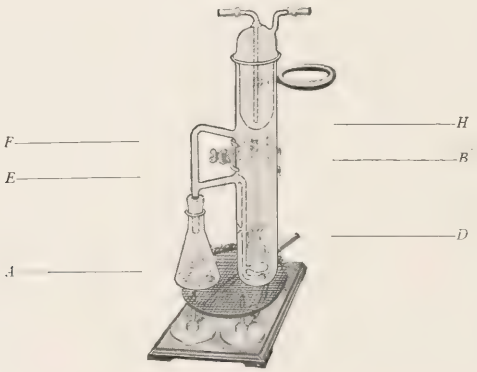
CLINICAL CHEMISTRY AND MICROSCOPY

LEIBOFF-TAMIS METHOD OF URINARY ESTROGEN EXTRACTION AND ASSAY

(*Note*:—The equipment and method outlined places this essential determination within the scope of the average laboratory.)

Estrogenic substance is excreted in a combined form to a considerable lesser extent in the urine of non-pregnant mature females. In this combined form it is biologically inert. By boiling the urine with acid (hydrolysis), the combined estrogen is set free and made extractable by fat solvents.

Figure 1



Method of Extraction

500 cc. of a measured 24-hour collection of urine is acidified with 50 cc. of concentrated HCl (pH-1.0) and the urine evaporated to about 200 cc. by boiling.

The apparatus is assembled as in Fig. 1. The 125-cc. Erlenmeyer flask *A* is connected to the arm *F*, by a cork stopper. A piece of glass wool (about two grams) is pushed down into the extractor *B*, to form a loose layer over the glass disc *C*.

150 cc. of chloroform are poured in the extractor *B*. The urine, which has been cooled to room temperature, is poured into the extractor through a funnel whose stem is held against the side of the extractor. The urine forms a layer above the chloroform.

The container in which the urine was boiled is rinsed with small amounts of water which are poured slowly into the extractor until chloroform begins to pass through tube *E*, into flask *A*. More chloroform is now added until 25 cc. collects in flask *A*.

The condenser *D*, is placed in the extractor with the cold water entering into tube *G*, and passing out through tube *H*. Heat is applied to extractor and flask.

When the chloroform in the extractor is brought to a boil, it rises partly into the layer of urine and slowly drops back. When the temperature of the urine is raised to that of the boiling chloroform, the chloroform bubbles vigorously through the layer of urine and vaporizes into the column of air above, where it is re-liquefied by the condenser. At this stage an emulsion forms between the layer of chloroform and the urine. The flame under the extractor *B*, is now reduced in order to keep the chloroform boiling gently, while the chloroform in flask *A* continues to boil vigorously. The glass wool prevents the emulsion from entering the tube *E*.

Once this point is reached the apparatus needs no further watching.

The chloroform vapors from flask *A* pass through the arm *F* into the extractor *B* and are condensed. The increased volume in the extractor causes the chloroform at the bottom of the extractor to rise in tube *E* and spill over into flask *A*. The performance is continuous.

Within one hour all the chloroform-soluble substances in the urine are completely extracted and transferred to the flask *A*. The chloroform in the extractor *B* becomes colorless.

Flask *A* is disconnected and 5 cc. of propylene glycol are added to the chloroform extract in the flask. (Olive oil or cotton-seed oil may be used instead.) The chloroform is driven off by heating on a water-bath until no odor of chloroform is detected. This propylene glycol extract is used for assaying. One cc. of the extract contains estrogen obtained from 100 cc. of urine.

Biological Assay

Either mature female white rats or mice may be used. Castration is performed through an incision in the back. The rate unit is five times the strength of the mouse unit. The rat is preferable as it is a hardier animal and may be used repeatedly for a longer period .

Three ovariectomized white rats are injected subcutaneously into the backs with the following amounts of the hormone extract:

Rat B	0.5 cc.
Rat A	0.25 cc.
Rat C	0.15 cc.

The injections are repeated 6 hours and 24 hours after the first injections thus:

Rat A receives a total of	1.5 cc.
Rat B receives a total of	0.75 cc.
Rat C receives a total of	0.45 cc.

Twenty-four, 36 and 48 hours following the last injections, vaginal smears are made and the reactions examined under a microscope. The smallest dose which produces the cornified cells characteristic of estrus is considered as containing one rat unit (R.U.) of ovarian hormone. From this result, the number of rat units in the entire 24-hour specimen of urine is readily calculated.

Vaginal Smear Reactions

0—Mucus, pus.

1—Less mucus, many pus cells, occasional epithelial cell.

2—No mucus, equal amounts of pus cells and nucleated epithelial cells.

3—Very few pus cells, mainly nucleated epithelial cells; many of which are in clumps, few squamous cells.

(To Page 103)

BACTERIA—RUMORS

(From Page 266)

we are not in good physical health, and not rested and are unfit are we apprehensive. The answer is obvious to all of us. The more physically fit we are the more rested we are, the less apprehensive we are. In conducting a psychological offensive, if you can deprive your enemies of rest, if you can reduce their food supply below a reasonable limit, if you place them physically below par, they are then ready for the psychological attack which might be something like the following. "You have lost some ships along the Atlantic seaboard"—"but we have only begun to sink your ships"—"we are about to launch thousands of submarines"—"you have not seen anything yet," etc., etc. And now get the picture: The neurotic individual who is a chronic worrier, the unstable individual, and the reasonably normal individual who is tired and undernourished—all these worry more or begin to worry and become apprehensive and their morale is lowered. But the thinking, physically fit individual only tightens his belt and says—"That's what you think", or "Says who?" or "So what?"

Then there is another type of psychological attack aimed at keeping your enemy in a comatose state, and this is of a quite contradictory nature; but when you understand, as we psychiatrists must understand, what the specific goal is, it becomes simple. If you say to your enemy "you have won", "you are coming out on top", then the complacent become more complacent and their need for exertion seems less. The purpose of this attack is simply to slow down your enemy's efforts and throw him off his guard. I chance to be a great admirer of Napoleon Bonaparte's brain power. Somewhere in his writings he says in effect—Appear weak when and where you are strong, and appear strong when and where you are weak. If we follow the advice of this master strategist we have the kernel of this particular type of psychological warfare. If we keep these two types of attack in mind, particularly that the attack is not an obvious one or altogether a visible one, the whole picture is easily understandable or easily identifiable.

Think of these attacks as bacteria, or as an epidemic which gets through *via* many channels and we will have a better understanding of this particular type of psychological warfare. Contagion can come through in the water supply and food supplies, can be carried on clothing from person to person, and by means of various other carriers, including rodents. Think always of this kind of psychological warfare as being carried through infinitely diversified sources as is any epidemic, and then you will understand the necessity of not looking for it through any single channel such as the radio or the press. It is always the same in purpose although it may sometimes come in the spore stage of the bacteria or the fully developed and tangible germs; but there are always *bacteria rumors, bacteria rumors, bacteria rumors,* which the enemy can count upon being passed from one to another as in any infection.

From time to time we have seen things in the paper to the effect that disease germs were being used by the enemy to spread infection and illness. That may or may not be true but if it is a figure of speech, with rumor the bacteria, it is true. Psychological offensive uses the bacterial rumors with a certain knowledge that somebody will be infected and to some extent they will spread the contagion.

And now let us swing to the defensive, but this will be extremely brief as you have allowed me altogether too large a share of your evening already.

The defense is obvious: Kill the bacteria, sterilize your people and build up their resistance as well as their ability to recognize the early symptoms of the infection.

Let me repeat—the defensive against the rumor part of psychological warfare is, first, kill the rumor bacteria; second, sterilize and fumigate; third, build up the individuals' immunity; and fourth, teach them to early recognize the symptoms of the disease.

Another defense against psychological warfare is that recommended by Napoleon over one hundred years ago—"The best defense is attack." So it is that one of our best defenses is psychological attack. To me it seems that with all the skill and effectiveness of the German war machine, they made a miscalculation in this field of psychological warfare. It may well be it was matter of timing once more. They had planned on a defensive against other's psychological warfare which consisted of withholding the truth from their own people. It might have been done successfully if the war could have been consummated in a short time. But this did not happen and the result was they kept their people ignorant of the facts which, in effect, was setting up a defense against propaganda and did not increase the immunity of their individual citizens, nor did it teach them to early recognize the symptoms of the disease. Individual immunity needs a free people who are taught to reason and think and evaluate for themselves. This did not obtain in Germany. Teaching the individual to early recognize the symptoms of the disease requires the same freedom of people, the same reasoning power of the individual citizen, and this did not obtain. I believe the German people are particularly vulnerable to attack because of the form

of defense against psychological warfare adopted by their leaders—a free people are psychiatrically sound because of being taught to meet reality.

All psychiatrists teach that one must meet reality and deal with reality. A free people is taught individually and collectively to deal with reality, to take things as they come and make the best of every situation. For this reason I have complete confidence in our ability to meet successfully all the attacks in the field of psychological warfare; and I will go further—I believe, as a free, intelligent, resilient people we have an opportunity to excel in the offensive in this very field chosen by your enemy.

We in the field of psychological medicine should see clearly that it is our job to furnish leadership, and intelligent leadership, in the field of psychological offense and defense. At every opportunity we should teach these things: Bacterial rumors are a part of psychological warfare; the enemy is attempting to spread the contagion; there are many sources of contamination; we must teach the individual to early recognize the contagion, to build immunity against it and, in case of doubt, to fumigate.

BRUCELLOSIS

(From Page 267)

febrile reaction with an irregular remittent course, much as in the human.

Brucellosis is truly protean in its manifestations. Different patients infected from apparently the same source present a great variety of clinical pictures; patients infected from different sources an even greater variety.

During the past ten years, as knowledge of brucellosis has advanced, it has become more and more apparent that the classical textbook descriptions of the clinical manifestations of the disease were based upon experiences with infections of goat origin; but since during recent years in this country the vast majority of the human infections have been from swine and catttle origin. The clinical picture apparently has changed; therefore, no single clinical picture will describe all cases. Recently we have begun to recognize the acute form and the chronic form separately.

Acute Brucellosis

Acute brucellosis is often at the onset, and not infrequently throughout its course, confused with malaria, typhoid fever, influenza, acute rheumatic fever. subacute bacterial endocarditis, bronchitis, pyelitis, appendicitis, cholecystitis, tularemia and typhus fever.

The incubation period is five days to more than one month, the onset gradual, though there may be a sudden onset with chill and fever to 105°. Common early symptoms are loss of appetite, weakness, headache and constipation. The patient or those in attendance will note an evening fever. The patient is not aware of and does not present the appearance of the degree of fever registered by the thermometer. The evening exacerbations often reach 106 or 107°.

In a third of the cases there are true rigors, but many patients experience slight chilly sensations and some no such symptoms. In half the cases there is some joint pain or swelling and muscle and nerve pains. Nervousness, restlessness, insomnia and delirium, especially that with the nocturnal fever rise, are apt to be extreme. This means, of course, that the nervous may be the first, in some cases the only, manifestations. Some of these suggest meningitis, encephalitis etc. Ocular symptoms are not infrequent. The principal gastrointestinal complaints are anorexia and constipation, which seems to parallel the degree of the infection. As is true of *B. typhosus*, the gallbladder may become infected with *Brucella*. The occurrence of abdominal pain often has led to appendectomy. Symptoms referable to the respiratory tract are most always present and pulmonary lesions occur fairly often. Brucella endocarditis of the vegetative type has been found at post mortem examination, the vegetations developing on valves previously damaged by rheumatic fever. *Br. abortus* has been recovered from abscesses of the genital tract of the male. There is little doubt that brucellosis is the cause of at least an occasional case of abortion in women. A variable skin eruption, usually papular or macular and sometimes even resembling psoriasis, is occasionally present.

Chronic Brucellosis

This phase or type of the disorder deserves most emphasis. The acute case may be diagnosed only after many other diseases have been excluded or after subsequent attacks; but it is and has been our opinion for a number of years that all of us were overlooking or failing to diagnose many cases of chronic brucellosis. Probably less than 10 per cent of the patients with chronic brucellosis give a history of a previous acute fever such as to arouse suspicion of acute brucellosis; and in many cases in which an acute febrile illness has preceded, another label has been applied—"influenza," "a touch of malaria."

The unfortunate name undulant fever has occasioned further difficulties, because in few cases has the fever run a wave-like course, and there are many afebrile cases. It must be that there are numerous subclinical cases. Many recent studies leave little doubt that a protracted, mild, partially disabling, often ambulatory brucellosis is wide-

spread and constitutes a major cause of chronic ill health. The patient, not incapacitated for work, complains of nervousness, weakness and exhaustion with or without fever. Because the common diagnostic tests are frequently negative and the most careful examination may fail to find physical evidences to explain the complaints, the diagnosis is too often neurasthenia.

One group of investigators has listed 150 different manifestations of chronic brucellosis. Three fairly characteristic features are weakness, low-grade fever and lack of objective findings.

Probably more than to any other the symptoms are referable to the central nervous system. In addition to the occasional acute invasion of the meninges, brain and spinal cord by brucella, there is evidence that the endoantigens of this organism circulating in the blood have a toxic action on the central nervous system.

Diagnosis

A number of technical tests may prove of specific or near specific value: 1) culture of the organism from the blood or other fluids or tissue, either directly or after guinea-pig inoculation; 2) serum-agglutination test for the specific organism; 3) allergic skin test for the specific antigen; 4) opsono-cytophagic reaction.

The cultivation of organism directly from the blood or other material involved provides the most specific diagnosis; but often this is difficult, especially for certain varieties of the brucella. Positive blood cultures even in acute or active cases rarely go above 60 per cent. However, in recent years cultural techniques have improved greatly.

The guinea pig is the most suitable laboratory animal for inoculation.

The agglutination test of the patient's blood serum is the most reliable indication in the absence of positive blood cultures, particularly in acute brucellosis with a progressive increase in the agglutination titer. This positive reaction ordinarily appears in the first to the second week, in some instances only after several weeks.

However, this test has been known to be negative continuously, or positive in only a very low titer, in cases with a positive brucella blood culture. In half the chronic cases this test has been found negative. A positive agglutination test in any dilution indicates current or recent infection. We have observed a rather high titer induced by vaccination diminish and disappear completely in a few months.

Some cross-agglutination with brucella has been observed with tularemia and typhus fever.

The intradermal test, using a minute amount of the antigen of the brucella is in my observation the most sensitive of all the tests. The performance and interpretation of this is very similar to that of the tuberculin skin test, with which everyone is familiar. Infected persons become positive to the skin test within two or three weeks and remain so for life. A positive skin test signifies a present or prior infection. In positive cases we have often seen the injection of the standard amount of vaccine or antigen injected intradermally for diagnostic treatment, or immunizing purposes, produce a local reaction at the site of infection and a transitory skin reaction at other sites, joint pains and fever. I have come to attach some diagnostic significance to the general as well as to the local reaction. In chronic cases, I also attach a therapeutic value to these systemic reactions, but in acute cases one should be cautious not to greatly aggravate the reaction already present from the flare-up of the infection.

For the most part I have used the commercially available vaccines for skin testing, for immunizing and for treatment. My custom was to dilute 0.1 c.c. with normal saline up to 1 c.c.; then to inject 0.1 c.c. of this dilution—0.01 c.c. of the original. This has been our initial treatment in chronic cases, or for building up or immunizing persons to serve as donors. When immunizing donors we have given the vaccine every third day, bringing the dose up gradually to 1 c.c., never giving more than a *total* of 10 c.c.; whereas in chronic cases I have placed the upper limit for *total* of treatment dose at 15 c.c. By doing an occasional agglutination test on the immunized donors we found the titer rose fairly rapidly, and then when the inoculations were stopped, the titer soon fell off, in a few months to zero. We soon learned that in order to evaluate a positive agglutination the blood must be collected before doing the skin test.

I have not employed the opsono-cytophagic test to any practical degree. From the reports of Huddleson and others this test can be used along with the other tests to advantage.

In our experience the blood has shown a slight leukopenia with a relatively high lymph count (30 to 40%) and a secondary anemia. The sedimentation rate of the blood often is normal or near normal in the chronic cases, but may be accelerated in the acute cases.

Treatment

Brucellosis is one of the most resistant of human infections. Support of the patient with fluids, concentrated nourishment, vitamins and minerals, and giving symptomatic medications while the body builds up its own resistance and immunity, while essential in any of the forms of brucellosis is often insufficient.

But our experience in treating this disease with the sulfonamides has been disappointing, which is

in keeping with the vast majority of reports of others. Arsenicals have been used with poor results.

Specific biotherapy in the form of goat, bovine and horse serums, and in the form of vaccines from the various varieties of brucella have been reported on without consistent results. With improvement of these materials there are some reasons to believe the results are going to continue to be more favorable.

After having used some of most all of the therapeutic procedures on a large number of these cases at Davis Hospital, Statesville, North Carolina, during the past eight years, we have agreed upon the merits of three procedures, all three of which may be employed in the treatment of the different stages of the same case. These are: fever therapy, blood transfusions and vaccine therapy.

Fever therapy has been employed by the use of the General Electric fever cabinet and inductotherm. The temperature of most patients was carried to 106 or 107 (by rectum) and maintained for five hours. The number of treatments varied from one to three. We have found this procedure safe and satisfactory, but a great deal can be said about the necessity of proper preparation of the patient and constant supervision by specially trained technician or nurse.

For blood transfusions we usually have obtained donors from the patient's own family or those having the same milk supply, so that they might have some substance immune to the infection in their blood. In other instances of chronic cases, where time would permit, we immunized the donors by a series of inoculations with a specific vaccine.

Vaccines, especially when the size and frequency of the dose is properly adjusted to the case, have appeared to be of advantage in the management of chronic cases. Usually we have employed the vaccine following the initial benefits from fever therapy and blood transfusions.

Animal Observation

In cattle the main symptom is abortion, this usually preceded by swelling of the genitalia and inflammation of the genital passages. A few days after the appearance of the catarrhal symptoms abortion occurs with moderate pains and mild general manifestations. A frequent occurrence in these cases is retention of the placenta. This may account for a prolonged discharge which contaminates the food material of other cattle or other animals and so transmits the disease to them. Finally the discharge disappears and the animal appears to be normal.

Some of these animals do not conceive again and others abort at an earlier or later period of gestation.

Peker has observed an arthritis which manifested itself by twitching of the extremities and by frequent lying down of the animal.

Discussion

Dr. George R. Wilkinson, Greenville:

First, I would like to call to attention the low incidence of the disease. Despite the fact, as in the case spoken of where the goat herdsman's wife had the disease, nothing is said about anybody else getting it from the same goats. I have been struck by the fact that you find one case and you don't see any more for four or five or six years from the same community. It must be that human beings have a higher resistance or the organism has a rather low virulence.

Next, the low mortality rate of the disease. The number that die with this disease is very small.

Next is the prolonged illness. One fellow was a-year-and-a-half under treatment—work awhile and rest awhile, work awhile and rest awhile.

The last point I want to make is about the difficulty of depending on laboratory findings. I hardly know any condition in which we have more difficulty in getting such confirmation. The treatment of the disease is equally unsatisfactory. Use of the vaccine in my hands has been of so little value that I hardly feel like using it. Neoarsphenamine has been the only thing that has done anything that I could call of value. It would seem to me that, with as many cattle as have the disease and with the mixed milk and the amount of raw milk that we get, mighty few people get the darned thing for the number of people exposed. We have a poor way of identifying the disease exactly and have practically no treatment to offer for it. We see the disease is growing. In other countries it is more prevalent than in the United States. I hope that before much time goes along we will have some laboratory method that will afford more reliable information, some way that we can take specimens and have examinations and be told it is there or it is not there. As it is now, we get positives in people we feel pretty certain don't have it and time proves that they don't have it. On looking up my records I found only two positive blood cultures in which I was certain about the diagnosis and who were seen by other people also who confirmed the diagnosis.

Dr. I. S. Barksdale, Greenville:

May I say a word from the standpoint of public health in this matter. We have had trouble with the disease here and have regarded it for many years as a serious public-health problem. We always investigate every epidemiological source, if possible, and find out where the milk is coming from and any and all possible sources of infection are taken into consideration. One was that of a young man who ate great quantities of Roquefort cheese, a cheese that comes from goats' or from ewes' milk. As years pass we learn more and more from our friends the veterinarians. Dr. Holbrook wishes Dr. Frank to tell the way he is doing away with cattle infection.

Dr. Frank, Greenville:

I am certain I cannot add anything to Dr. Holbrook's paper that is pertinent. If there is some question as to the veterinary phase?

President Brenizer: Doctor, we would be glad to hear from you further.

Dr. Frank: For the past six, eight or ten years brucellosis has been attracting much of our attention. I don't know whether it is going to die out or not. Unless we can breed cattle faster than I believe we are going to, we

will run out of cattle before we clear it up.

In talking of the skin test, possibly Dr. Holbrook had reference to Huddleson's method. Huddleson and I were in school together. Four members in the same family reacted to skin tests and Huddleson was positive that we had better use skin tests in conjunction with other tests. He feels that first is clinical symptoms and history; next is a combination of tests—of course the culture test if you can do that as has been brought out so ably. The disease is advanced before you can find the organism, but in veterinary medicine—especially at Indianapolis where I was during the summer attending the section on research—it was stressed extensively not to rely wholly on one test.

DR. JAMES K. HALL, Richmond:

I wonder—is there a veterinary school in the South. We need veterinary medicine in the South. I hope we can improve the livestock that affect human health. Those who think they are learned told me when I was at Medical School that they felt certain Moses was a physician and Moses forbade eating of hog meat because he knew hogs had trichinosis. We do need veterinary schools in the South. Tuberculous disease in cattle and a number of other diseases should be dealt with before they reach human beings.

DR. BRENIZER: Doctor Frank, is there a veterinary school in the South?

DR. FRANK: Yes, sir at Alabama Polytechnic and at Texas State College. It will take but a minute to name all in the Nation—Kansas State, Iowa State, University of Ohio, University of Pennsylvania and Cornell. By the way, there are not many men studying veterinary medicine now owing to the fact that they have to have two years of college and then five years more.

DR. J. M. NORTHINGTON, Charlotte:

In reference to Dr. Wilkinson's observation that we see only one case in a family or neighborhood. At the last meeting of the Southern Medical Association I heard a speaker who was emphasizing the opposite say it was a much commoner disease than we suspected. He stated that from a certain district in the State of Missouri an enormous number of cases of undulant fever came to St. Louis for diagnosis. He said the diagnosticians there were alert for the condition in any patient coming from this district.

DR. J. S. HOLBROOK, closing:

I was interested in the comment in regard to veterinary medicine. I have had the privilege of being associated with veterinarians very pleasantly. At the University of Pennsylvania I lived almost next door to the Veterinary College. In the Army I am rooming next door to an Army veterinarian and their literature and knowledge have contributed to this particular study.

I agree with Dr. Wilkinson that the mortality is low; but the morbidity is fairly high. I had a case recently in which rheumatic pains, for years had sent the patient to many specialists over the country. She was sent to our clinic as having sinus trouble. In the routine examinations she had a positive reaction for brucellosis. She was treated and has felt perfectly well since. Many cases of that sort we have overlooked because we didn't do routine tests and because some tests are difficult to interpret.

I appreciate your time and discussion very much.

DOUBLE GALLBLADDER.—Two cases are reported in the April issue of the *American Journal of Digestive Diseases*. This possibility is to be borne in mind in diagnosis and treatment.

ANORECTAL INFLAMMATORY STATES.—31 unselected cases (nonsuppurative) treated with suppositories of sulfanilamide (1%) and metacaine in a gelatine base with good results in all.—*Am. Jl. Dig. Dis.,* Apr.

STENOSING ULCER

(From Page 268)

of jejunal ulcer as being preferable to the greater risk attending resection. However, while it is not unusual to see patients whose obstruction seems to be complete when first examined, it is probable that there are few who will not be found to have sufficient opening to permit secretions to pass if the stomach is properly prepared by lavage and constant tube drainage for a sufficient time. The question of rehabilitation and nourishment under such circumstances presents a real problem which can be met only by blood transfusions, glucose and saline intravenously, and vitamins. Certainly until dehydration and marked anemia are corrected and the urea, blood chloride and serum protein values are somewhere near normal, the operative risk will be prohibitive. That the deficiencies of these badly starved individuals can be overcome sufficiently to permit reasonably safe operation has been demonstrated to our satisfaction in several instances, two of the most striking being the two cases subjected to the two-stage operation.

Case 1.—A white mechanic, aged 52, was admitted April 27th, 1939, with a typical history of duodenal ulcer of seven years duration, characterized chiefly by epigastric pain, and more recently by obstructive symptoms. He had gradually, but persistently, gotten worse and for some time had subsisted entirely on a diet of milk and eggs and olive oil. Even on this diet he had frequent vomiting spells and he had lost weight steadily. He was much emaciated and dehydrated and very weak. There was advanced dental caries and pyorrhea. The lungs were clear. There was no evidence of organic heart disease either on physical examinatiton or by electrocardiogram. The heart rate was 44 per minute, systolic blood pressure 80; diastolic 40; leukocyte count 9,400, with 80% polys and 20% lymphs. The red blood count 3,260,000 with 65 per cent hemoglobin, Wassermann negative. Gastric analysis showed HCl 20°, total acid 75°, lactic acid none; blood-chloride 363 mgs., urea 108 mgs.: urine—faint trace of albumin, no sugar, specific gravity 1.010, microscopic examination negative. X-ray examination showed a large, flabby, atonic stomach markedly ptosed. There was a very marked deformity of the pylorus and upper duodenum, with no filling at any time, the barium passing through in an intermittent trickle. There was retention of two-thirds of the meal at two and one-half hours and about one-half at the end of eight hours.

Treatment was started with gastric lavage, followed by an indwelling Levine tube, all attempts at giving nourishment by mouth being discontinued. He received glucose and saline intraven-

ously daily, also thiamine chloride. On April 30th he was given a transfusion of 500 c.c. of citrated blood. On May 7th orange juice in small amounts was started and the diet thereafter gradually increased until he was taking and absorbing fairly adequate amounts, chiefly orange juice, milk and eggs. He continued to get 1,000 c.c. of 5 per cent glucose and 1 c.c. of thiamine chloride daily. He was given 2 c.c. of liver extract daily for several weeks.

For the first nine days the temperature ranged between 97 and 98. On the tenth day after admission his temperature went to 101.6 and for the next two days as high as 102.8., dropping abruptly to 97.5 on the fourteenth day with no further rise above 100 thereafter. We could find no satisfactory explanation for this fever at the time. Judging from the findings at operation three weeks later, there may have been some spread of infection about the duodenum and pylorus. By the end of May urinalysis was negative, blood urea 24 mgs., blood chloride 495 mgs., white blood cells 10,900 with 70 per cent polys, red cells 3,539,000 with 60 per cent hemoglobin. The patient had been taking and digesting fairly adequate amounts of nourishment for ten days.

He was given his second blood transfusion of 500 c.c. on May 29th and on May 30th was operated upon through a high, right paramedian incision. Anesthesia was ½ per cent procaine for abdominal wall block and nitrous oxide-oxygen supplemented with 1½ oz. ether. The pylorus and upper duodenum were found to be involved in a firm thickening, evidently inflammatory, with extensive induration and scar tissue. The inflammatory involvement extended down to the region of the common duct. There was a crater-like depression about 2 cm. in size anteriorly about at or just below the pylorus. There was considerable edema and congestion of the tissues about the duodenum and pylorus and the latter could not be identified definitely. The duodenum was adherent to the gallbladder in front and the pancreas behind. No enlargement of the regional lymph nodes was detected. The liver was normal. Because of the extensive subacute inflammation and the still weakened condition of the patient, it was felt that primary resection was not warranted. Therefore, the stomach was divided approximately in half between two Payr clamps and the distal segment was closed off and dropped back. The proximal segment was anastomosed to the jejunum by the Polya method, retrocolic, without clamps and without entero-anastomosis of the jejunal loops.

Immediately on completing operation the patient was given his third transfusion of 500 c.c. of citrated blood. Postoperative convalescence was smooth with the temperature never reaching 100 until the tenth day, when there was a fever of 101 due to a mild inflammation of the left parotid gland. This cleared up promptly with local application and two x-ray treatments.

On June 24th, following a week free of fever during which time the patient had been taking a liberal soft diet, the abdomen was reopened through the previous incision. There were light omental adhesions beneath the incision and about the pylorus and duodenum, but no adhesions at the gastro-jejunal anastomosis. The indurated edematous condititon of the duodenum and pylorus found at the previous operation had cleared up entirely, but it was still not possible to identify the pyloric ring, which with the first portion of the duodenum was involved by a contracting, encircling mass of scar tissue and was adherent to the pancreas posteriorly. The isolated segment of the stomach and the involved pylorus and duodenum were dissected free from above downward and removed without difficulty, there being ample, practically normal duodenum for satisfactory closure.

When the removed segment was dissected, the pyloric ring could not be definitely demonstrated, it being involved in a constricting, rigid mass of scar tissue encircling a lumen less than 0.5 cm. in diameter. The pathologist could find no evidence of carcinoma.

Postoperative convalescence was entirely normal. Liquid diet was started on the day after operation and soft diet three days later. The patient was discharged on July 15th, 1939. He has remained perfectly well since operation, has gained 40 pounds, and is able to do any sort of work that he ever did.

Case 2.—A white farmer, aged 49, was admitted October 29th, 1937, because of perforation of a duodenal ulcer nine hours before. Operation through a high right-rectus incision disclosed a perforation 1 cm. in diameter in the anterior portion of the duodenum almost at the pylorus. The ulcer, with half of the pyloric ring, was excised, the incision extending well into normal stomach above and normal duodenum below. The resulting opening was closed transversely, leaving what appeared to be an ample lumen. The abdomen was closed without drainage. Convalescence was satisfactory except for slight fever for six days, reaching 101 only once, evidently due to a superficial wound infection.

Following his discharge on November 24th, 1937, the patient considered himself well for two years. From then until his second admission he had experienced symptoms of steadily increasing obstruction.

For some time before the second admission, November 1st, 1940, he had no appetite, experienced vague discomfort in the upper abdomen, and had vomiting spells. There had been no real pain at any time. He was too weak to work and had lost 30 pounds. Except for considerable emaciation and weakness, his physical examination was negative. The heart and lungs were normal. Blood pressure 124 systolic, 80 diastolic. The abdomen was soft and flat, no tenderness and no mass. Specific gravity of the urine was 1.021, no albumin, no sugar, microscopically negative. Blood urea was 36 mgs., chlorides 363 mgs. The x-ray report noted a dilated, completely atonic and flaccid stomach with fully two or three quarts of retained fluid. It was not possible to get any of the barium through the pylorus. There was still no emptying at the end of five hours. At fluoroscopy three days later the barium was found to have reached the colon.

After gastric lavage a Levine tube was kept in the stomach, and all nourishment withheld for six days. He was then tried out on liquid diet but little or nothing passed the obstruction. Because of the extensive ptosis the Trendelenburg position was tried; no benefit was derived. On November 16th all attempts at giving nourishment by mouth were abandoned, and the stomach was kept empty from then until his first operation ten days later. During this whole preoperative period the patient was sustained on intravenous glucose and saline, with thiamine chloride 1 c.c. daily. He was also given normal saline by rectum for a number of days. On Nov. 21st he received a transfusion of 500 c.c. of citrated blood. On Nov. 22nd his blood urea was 20 mgs., chloride 445 mgs., dehydration had been overcome and he felt a great deal better. On November 25th, the day before operation, his serum protein was 5.78 per cent. The following morning, November 26th, he was given a plasma transfusion of 500 c.c., and that afternoon his abdomen was opened through a high midline incision. Fairly extensive omental adhesions were found beneath the old right-rectus incision. The stomach was dilated and flabby. The pyloric portion and the adjacent duodenum were buried in adhesions. There was a mass 4 cm. in diameter involving what was thought to be the pylorus. It was impossible to say whether this was benign or malignant. Apparently the pancreas was not involved. There were no suspicious lymph nodes felt, no nodules in the liver. There was considerable edema and congestion about the pylorus and upper duodenum. It was felt that removal of the involved structures would entail a tedious and bloody dissection which the patient was in no condition to withstand. Accordingly, the stomach was divided between two Payr clamps at such a point as to leave one-third in the proximal segment. The distal segment was closed and dropped back. An antecolic Polya anastomosis was then made between the proximal segment and the jejunum, without entero-anastomosis of the jejunal loops. The abdomen was closed without drainage. Following operation a transfusion of 500 c.c. of citrated blood was given.

Postoperative convalescence was uneventful with maximum temperature of 99°. Glucose intravenously and normal saline by proctoclysis were continued until the patient was taking adequate amounts of liquid nourishment on the sixth day. For a week before the second operation he was taking a liberal soft diet. On December 14th the abdomen was reopened through the old high right-rectus incision. There were moderate adhesions beneath the previous midline incision and of the distal segment of stomach. The gastro-jejunal anastomosis lay well to the left and was free. Evidences of inflammatory reaction about the pylorus and duodenum were much less than at the previous operation. Grossly there was nothing to suggest cancer. The pylorus was now much more open with no cause for the obstruction apparent except some constricting bands at the site of the previous pyloroplasty. The duodenum below the old pyloroplasty now appeared to be practically normal. There was no enlargement of the adjacent lymph nodes. The pancreas was not adherent. No difficulty was experienced in removing the isolated segment of stomach and the pylorus, there being ample normal duodenum for adequate closure. The abdomen was closed without drainage. A transfusion of 500 c.c. of citrated blood was given immediately after operation. The pathologist reported the tissue to be inflammatory with no evidence of carcinoma. Convalescence was normal the only fever 100.4 on the second day. Restricted soft diet was resumed on the third postoperative day. The patient was discharged on January 4th, 1941. He continued to gain rapidly and was plowing and attending to his farm work by March 1st. He regained his lost weight by summer and has had no further trouble with his stomach. He considers himself perfectly well now but prefers to eat about five small meals rather than three full meals.

There is nothing particularly unusual about these two cases, though they serve as rather striking examples of what neglected peptic ulcer can do, and of the lengths to which preoperative treatment must be carried if such patients are to be saved. Obviously some operation, either to side track or to remove the obstruction, was necessary in both cases. Neither gastro-enterostomy nor antral exclusion was thought to be advisable, for the reasons mentioned. Complete removal of the involved por-

tion, along with sufficient additional stomach to minimize the possibility of recurrence, is certainly desirable in such instances. Whether this should be done in one stage or in two is a matter of opinion, dictated largely by the experience of the individual surgeon. However, with extreme depletion of the patient plus extensive local subacute inflammation, the two-stage operation would seem certainly to merit serious consideration. Regardless of the operative procedure selected or of the technical skill of the operator, there can be no disputing the necessity for intensive and prolonged preoperative preparation. Previous to our undertaking partial gastrectomy for ulcer we did a number of these operations for carcinoma, with a higher mortality than there should have been. This was very largely because of our failure to realize the importance of this preparation and of a routine postoperative blood transfusion.

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Discussion

Dr. Chas. Stanley White, Washington:

Dr. Boice has called our attention to a common condition of concern to surgeons and physicians as well. Don't the surgeons blame the internists when they have a pretty hard pyloric obstruction? We have had patients when we said the internists should not have let them get in such bad condition.

I think preparation for the operation is as important as the operation itself. If you take a patient and operate on him the following day, you make a serious mistake. The matter of delaying sometimes strains the economic condititon. A patient can't afford to spend a week or two in the hospital. The surgeons should be willing to share fees with the hospital in order to get the patient in better condition. In the long run it is good business and we will turn out more patients cured. Preöperative preparation in more than getting a routine blood count and urinalysis. It should consist of extensive blood examinations and correcting errors. I have a feeling that plasma injection is clearly indicated instead of whole blood if the hemoglobin be high, and the patient should be kept in the hospital a week or two before operation is undertaken and be thoroughly fortified by fluids.

As far as the two-stage operation is concerned, some observers think it is a lack of courage or judgment. I find no difficulty in putting it up to the patients themselves. Tell them you can do a two-stage operation with perfect safety. Everyone will say two-stage. I would, myself. If you put it on that basis, you will have very little difficulty getting permission to do a two-stage operation.

One should not begin a surgical procedure with the fixed idea that he is going to perform a certain operation. He should do what is indicated when he gets in, for God only knows what he is going to find when he gets in.

Thorough preparation of patients and fitting the operatiton to suit condition of the patient, rather than determining the procedure from appearance, would lower the mortality and we would have more living patients.

Dr. A. E. Baker, Charleston:

I have enjoyed listening to Dr. Boice present his ideas on this subject, his plan of treatment and the excellent results obtained in these patients very ill with pyloric obstruction. We cannot help but realize how essential it is to make a fair operative risk of a patient who is depleted from starvation, before attempting any surgical procedure.

Many patients, with complete pyloric obstruction, can be so relaxed by bed rest and neutralization that food will pass through the pylorus; however, when they go back to work under stress and strain, obstruction again occurs. As stated by Dr. Boice, the administration of glucose, blood transfusions and vitamins is essential.

Of surgical methods, that of choice is partial gastrectomy for several reasons: 1) We get rid of a large proportion of acid secreting glands; we alow the akaline contents of the anastomosed jejunum to flow into the remaining portion of the stomach; 2) we avoid chances of a marginal ulcer.

Don't forget that partial gastrectomy is a dangerous operation and should not be performed on patients who are in poor condition. It is much better to have a live patient with a gastro-enterostomy, although there is a 15 per cent chance of a future marginal ulcer, than to have him die from the operation. The two-stage partial gastrectomy as described by Dr. Boice is excellent.

I have done gastro-enterotomies on a number of patients in the past 15 years for pylonic obstruction, none of whom has had any trouble that I know of. I think this is a very good operation on very ill patients.

THE ORIGIN AND HISTORY OF OPHTHALMIC LENSES AND SPECTACLES

(Lieut. C. L. Blew, M. C., U. S. Army, in *Military Surgeon*, Oct.)

Some credence is placed on the claim that as early as 2283 B. C. a Chinese emperor used lenses made of rock crystal, quartz, topaz, or amethyst to observe the stars. It has likewise been recorded that a short time before the first century A.D. the Phoenicians learned the art of glass-making from the Chinese. They found that nitre mixed with sand was melted by the sun's rays into a coarse glass. Some convex glass was found in the excavations of Pompeii and Ninevah, but the focal length of these lenses was so short that they could not have been worn before the eyes.

Evidently there was a long gap in which spectacles either were not used or the art of making them forgotten, for the first historical data indicate that glasses were known in China and Europe in the 13th century.

The tortoise was a sacred reptile to the Chinese and therefore tortoise shell rims were considered conducive to good fortune and long life.

Europeans of the 13th century wore nose glasses with round lenses. Roger Bacon's *Opus Magnus* (1268) treats on the science of optics in general, and lenses in particular. Such lenses were made of crystal or glass and were to be used resting on the page, to magnify the text.

Amati, an Italian, was said to have invented glasses in 1285. On his tombstone in a Florentine churchyard was found the inscription: "Here lies Salvino del Amati of Florence, the inventor of spectacles. God forgive him his sins. Died in the year of our Lord 1317."

After the invention of printing in 1440, many found it necessary to correct their visual errors. As early as 1463 the Spectacle-Makers Guild took part in a review before the French king.

The earliest known lenses were for the correction of presbyopia, the strongest being about plus 3.00 diopters,

first used as hand glasses. The next lenses developed were for correction of hypermetropia; not until the 16th century did lenses for myopia come into use. In 1623, Daza de Valdes of Seville mentioned cataract lenses.

Primitive tribes in various parts of the world devised light protective goggles before contact with civilization brought knowledge of glass. Records indicate that prisms were first recommended for the correction of squint about 1844.

The earliest reference to manufacture of green lenses was in 1651 in England, blue glasses in 1672, smoked glasses in 1767, amber lenses in 1832.

The existence of glass dates back to about 5000 B. C. The industry was well established in Egypt in 1500 B. C. Remains of window-panes were found in the ruins of Pompeii. Plate glass was first rolled in 1668 in France. Captain John Smith established glass works in 1607 near Jamestown. The first attempt to manufacture optical glass in the U. S. was made about 1899, by Mr. Macbeth, at Elwood, Indiana. Work was soon abandoned and the next attempt was in 1912 by Bausch and Lomb in Rochester, N. Y. The telescopic gunsight was developed at the insistence of Admiral Sampson. When America entered the World War, one of the chief concerns was the need for optical glass. Through a group of scientists in the Geophysical Laboratory in Washington, optical glass of suitable quality was produced.

Clear crown glass, the type most used for ophthalmic lenses, is similar to the better grades of plate glass, with refinements added to obtain opical qualities. This glass contains about 70% sand, 11-13% calcium oxide or lime, and 14-16% sodium oxide or soda, with a small percentage of potassium, borax, antimony and arsenic.

The glass must not discolor when exposed to sunlight, must resist the action of weather, be hard and be tough enough not to scratch easily or break.

First, a suitable pot or crucible in which to melt the glass is made of a mixture of clays known as kaolin, ball clay, and grog or burned clay. Only a few known deposits of sand will furnish a suitable quality for making optical glass.

Twenty-two hours is required to complete one melt; the molten glass is then rolled out to a thickness of 3/8ths inch and slowly cooled over a period of eight hours. The sheets are cut and examined.

Benjamin Franklin is credited with the manufacture of the first pair of bifocals.

Our present-day bifocals were developed as late as 1930.

SOME EMERGENCY DRUGS IN GENERAL PRACTICE

(F. F. Yonkman, Detroit, in *Jl. Indiana State Med. Assn.*, April)

Sulfadiazine in pneumococcal pneumonia, in beta hemolytic streptococcal infections.

Our best analgesic still is morphine, although codeine and dilaudid are useful. In certain pains oxygen is effective—migraine, coronary thrombosis, angina pectoris, adynamic ileus, severe infections and toxemias and shock.

Amyl nitrite and nitroglycerin have long been important drugs. Gastro-intestinal and biliary spasm is often relieved by inhalation of amyl nitrite, by relaxation of all smooth muscles, including the spastic sphincter of Oddi, allowing dammed back bile to escape.

A very important usage of the nitrites is relief from cyanide poisoning. Sodium nitrite, 0.3 to 0.5 gram, is injected intravenously in 10 c.c. of saline, immediately *after which* (never *with!*) 25 grams of sodium thiosulfate in 50 c.c. of saline are injected slowly in 10 to 20 minutes. This may be repeated as needed.

Ethyl chloride's very deep analgesia and light anesthesia, quickly produced, warrant its frequent use by the general practitioner. In the early treatment of severe sprains, sprayed on just to the point of whitening of the skin without freezing, reflex spasm and pain is relieved in the affected area, early ambulation is allowed, resulting in clearing of edema. Freezing can be prevented by quickly placing one's finger or thumb over the whitened area; may be repeated three or four times, or more. Its use is simple and efficient in low-back pains, including sacro-iliac involvement.

Sprains and pains of other origin are being treated by the injection of procaine and alcohol.

Depression induced by overdosage of barbiturates can be counteracted by strychnine, picrotoxin and metrazol. Picrotoxin, 3 mgm. intramuscularly, repeated until skeletal tremors or signs of slight motor activity appear. A solution of 1:1000 strength of picrotoxin in 0.9% sodium chloride slowly passed into a vein skeletal tremors serving as guide to the speed of injection.

The best emergency treatment of strychnine convulsions is a soluble barbiturate.

In eclampsia oxygen, veratrum viride, dehydration with magnesium sulfate.

Should profound slowing of the heart result from veratrum or any similar vagal stimulant, 1 mgm. of atropine injected intravenously may give dramatic and life-saving relief.

Atropine is the only known antagonist to the profound toxic symptoms produced by mushrooms which contain the alkaloid muscarine—1 mgm. intravenously or 1 to 2 c.c. of tincture of belladonna hypodermically. Never should mecholyl or similarly potent cholinergic (parasympathomimetic) drugs be injected without having immediately available a solution of atropine sulfate, 1 or 2 mgm. per c.c., drawn into a syringe to be used at once in case great slowing of the heart rate.

Another emergency use of atropine is in acute coronary attacks.

Serious danger attends pituitrin injected intravenously, as it may cause acute coronary constriction. Should this occur, epinephrine, 0.5 c.c. of 1-1000 solution or ephedrine sulfate, 5 or 8 mgm., intravenously, are the agents of choice in this emergency.

Uterine spasm or tetany induced by too early obstetrical use of pituitrin may likewise be relaxed by epinephrine intravenously.

SCHERING AWARD WINNERS

Winners of the Schering Award for 1941 are Fred Feldman, Albany Medical College; and Cesare Lombroso, Johns Hopkins Medical School, first and second prize, respectively. Elizabeth Brown, Albany Medical College, and Clarence Denton, Long Island College of Medicine, have been awarded third prize of $100 in duplicate.

The Schering Award, established by the Schering Corporation and conducted by the Association of Internes and Medical Students, offers two tuition scholarships of a year and a half-year, respectively, for the best papers dealing with some aspect of Endocrinology submitted by undergraduate medical school students in the United States or Canada.

Papers were submitted by students representing twenty-four medical schools in the United States and Canada.

Plans for the Schering Award competition for 1942 which will again be sponsored by the Association of Internes and Medical Students, are being formulated. The subject for this year's paper as well as the full panel of Judges will be announced shortly.

SOUTHERN MEDICINE & SURGERY

Official Organ

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As is true of most Medical Journals, all costs of cuts, etc., for illustrating an article must be borne by the author.

THE RELATION OF THE MEDICAL MAN TO HIS NEUROTIC PATIENTS

IN HIS DEALINGS with his neurotic patients a doctor needs all the help he can get. Here is the gist of a remarkably helpful article. It is understandable, reasonable, written in terms generally understood—all betokening intimate familiarity of the essayist[1] with her subject.

The medical man often does not understand what these neurotic patients are seeking from him, what he can do for them, the nature of their peculiar type of dependence upon him. When he tries to deal with the problem he feels inadequate. The feeling of inadequacy is itself an additional hazard in the undertaking. Since nobody likes to feel inferior the impulse is always to try in some way to get rid of the feeling. One of the ways to be more comfortable is to rationalize, covering up something by a false but plausible explanation.

The rationalization which doctors often make concerning their feeling of nonsuccess with neurotic patients is some form of blaming the patient. They say the patient is uncoöperative, or made of inferior stuff, or a weak character. A physician receiving a panic call from a chronic neurotic is likely to make disparaging comments about the patient, whereas an emergency call from a non-neurotic patient immediately rouses professional concern and a sense of responsibility. In the second case the physician knows what to do, and in the first case he has a feeling of helplessness because he does not know what to do. He will do something but he does not know clearly why he does it and he has a feeling that it is just luck if it works.

Sometimes the patient persists in no improvement from the outset. He either goes from one physician to another seeking confirmation of his fear, or he clings to the first physician. He seems to find grim satisfaction in coming back week after week to report no improvement. The physician becomes increasingly annoyed, and begins to wonder if he is not accepting money under false pretenses. He begins to run down the patient in his own mind and may end by completely losing his temper and driving the patient away. The whole situation leaves the physician feeling humiliated.

There are two nonpsychiatric ways of dealing with neurotic patients in general use. One method is reassurance, simple suggestion or this reinforced by placebos. The second is an attempt to reduce the patient's problem to organic terms. At one period it was autointoxication, at another focal

1. Clara Thompson, M.D., New York, in *Medical Record*

infection, and surgery has always been popular. Today, about three fields carry the burden of the neurotic patient's demand for treatment. One can tell him he has an allergy, an endocrine disturbance or a vitamin deficiency. Certain types of patients always improve under such treatment. It takes away the stigma of being neurotic and assures the patient of the physician's interest. However, the cure usually is not lasting.

The medical man without training in psychiatry can do a real service for many neurotic patients. An intelligent interest in the patient's total personality is very important. One must divorce oneself from the idea of organ therapy. A person suffering from indigestion may not need to have his stomach treated; persistent inquiry may show that he is suffering from a chronic resentment in an unhappy marriage. Surprisingly often the patient knows what is really troubling him. He had not mentioned it because he had supposed it was of no concern to the doctor.

Many diseases with organic changes are profoundly influenced by repressed emotions; *e.g.*, gastric ulcer, hypertension, hyperthyroidism and asthma.

The neurotic patients who come seeking help fall into three groups.

The first type is responsive to any form of treatment. He is usually a likable and rather superior person. He does not parade his symptoms.

Those of the second type do not improve because life offers no reason to get well. A woman of this group does not come to the physician because she wants to be cured. Her illness is her main interest in life. One can make such a patient's life bearable by a kindly tolerance of her dependence. Sometimes, because of the physician's interest in her development she can be encouraged to find a few new satisfactions but she will probably always need support.

In the third type revenge is an important motive. The wife who through her misery and complaints constantly keeps her husband feeling guilty for something cannot afford to lose her neurosis. Reassurance annoys her and one day she will tell her friends that her physician is incompetent, she may even imply that he did her harm.

It is important to consider the attitude which the neurotic patient develops towards the physician. Transference is dependency upon another person.

Extravagant admiration and confidence in the physician is a frequent attitude; usually there is a swing to the opposite extreme in time. We are the descendants of the patients of the witch doctor whose authority was such that he could cast such a spell on individuals that they would die of fright.

A person who is always submissive to people in authority will be submissive to us. The patient one day becomes angry, doubts our ability and criticizes all we have done for him. This must be accepted as dispassionately as we have accepted his admiration.

One whose habitual attitude toward authority is one of defiance will have that attitude in relation to us. Transference explains why a patient comes, asks advice, pays for it, and disregards it.

The tendency of many a woman patient to fall in love with the doctor may be an attempt to get herself a permanent doctor, one who will indulge and baby her. She thinks loving him will cure her. Sometimes it has a less innocent purpose. The patient wants power; she wants this important man in her clutches; she wants him there in order to get even with all men for something. Adequate dealing with the problem of transference is the central problem of psychoanalysis. It is because of transference that the doctor has great emotional value to the patient. Most of all it is important not to become involved in the patient's attitudes. We must be equally objective about their love and their hate.

DIAGNOSIS AND TREATMENT OF PITUITARY DISEASE

THAT little bit of tissue at the base of the brain which for so long a time was regarded as insignificant, how it does signify now! That this 5- to 10-grain blob's place in the human economy was regarded as near zero is attested by the names given it—pituitary, secreter of mucus; hypophis, beneath nature.

But how the discoveries of the third of a century just past have brought out this structure. A mighty midget has it proved to be—the regulator of the regulators of nearly all our affairs, a veritable king of kings.

An admirable synopsis[1] of the place of this gland in disease production and cure is herewith abstracted liberally.

All endocrine glands and many other organs, among these the liver, the spleen, and the digestive tube, are under the influence of pituitary hormones. The wide influence is exerted by the organotropic hormones (gonadotropin, thyrotropin, adrenotropin); and by other factors which act, independently from the endocrine system, directly upon both phases of metabolism.

Alteration of pituitary function as a whole is rare. Ordinary clinical examination and judgment play the supreme role in diagnosis, laboratory

1. M. A. Goldzieher, New York City, in *Penn. Med. Jl.*, April.

findings and special endocrinologic methods being employed as aids.

History goes a long way. Symptoms which arise suddenly with the onset of puberty or coincide with each menstrual period, or during or soon following pregnancy point to the pituitary gland.

Acute infectious conditions may be causative factors; also infection ascending along the remnants of the crainophyaryngeal canal, which persists in 10 per cent of all cases. The surprisingly frequent onset of adiposogenital dystrophy immediately following tonsillectomy gains its logical explanation by recognition of the hidden connection between the nasopharynx and the sella turcica.

Study of the patient's eating and drinking habits may direct attention to hypoglycemia or retention of salt and water.

Obesity per se is no evidence of pituitary disease; but peripelvic fat accumulation and special fat pads on the extensor surface of the upper arm or the medial surface of thigh and knees are. Development of genital organs and hair, and size and shape of breasts are directly dependent upon the function of the sex glands, indirectly upon the gonadotropic activity of the pituitary gland. First we must rule out non-endocrine factors. *Hypo*tension is common in pituitary disease, but *hyper*tension is noted with retention of salt and water. A drop in blood pressure in the erect position is surprisingly frequent in pituitary disease regardless of whether the adrenals are involved.

In *hypo*pituitarism expect relative lymphocytosis, slight eosinophilia, low basal metabolism, decrease in specific dynamic action of proteins, decreased fasting blood sugar and increased sugar tolerance; and increased blood uric acid and cholesterol. In *hyper*pituitarism, there is normal or increased basal metabolism, normal or high dynamic action of proteins; the fasting blood sugar is normal or increased with decreased sugar tolerance; leukocyte ratio and blood uric acid, cholesterol, sodium and chloride no different from *hypo*pituitarism.

The physiologic increase in acetone bodies after eating fat is absent or reduced in pituitary insufficiency; simpler and more important is the salt-tolerance test. The patient is kept on a standard diet of measured food and liquid intake for 48 hours. On the second day 10 grams of sodium chloride and 250 c.c. of water are given. The excretion of water and sodium chloride is determined separately on the two 25-hour urine specimens. Retention of salt plus water retention strongly indicates pituitary disease.

In acromegaly or gigantism there is expansion of the cancellous bone, especially in the cranial vault, paranasal sinuses and mastoid cells. Similar changes in eunuchoidism, which are to be compared with those of pituitary dwarfs or cases of infantilism. Cranial dysplasia is present in 96% of the cases of pituitary disease.

Changes of the sella turcica are of less importance except when distention or erosion reveals the presence of an expanding growth. The nodular lesions of the pituitary gland found in 22 per cent of all autopsies are usually too small to alter the surrounding bony frame. Enlargement or abnormal position of the clinoids, causing pressure upon the pituitary stalk and interference with the nervous connection to the hypothalamus, is noted with great regularity in case of disturbed salt and water metabolism.

Tumors within or above the sella turcia, syphilitic or tuberculous lesions, necrosis due to circulatory disturbances, especially postpartum, and degenerative changes acquired in the course of infectious diseases constitute the bulk of pathologic changes. Functional exhaustion of a constitutionally weak gland, or of one previously impaired by some of the enumerated changes is the common cause of symptoms.

All rapidly growing pituitary or suprasellar tumors should be extirpated; those impairing vision at once. In other cases x-ray treatment should be tried first. Failure of radiation to relieve headaches, continued erosion of the sella or progessive impairment of vision calls for surgical removal.

In cases of tumors too small to impinge upon the optic nerve trunks or to erode the sella turcica estrogen by injection at least 10,000 R.U. of the benzoate or propionate, at not more than three-day intervals.

Hormone therapy of hyperpituitarism has given encouraging results in cases of gigantism, as well as in pituitary basophilism.

It is seldom possible to practice causal therapy arrest or remove the pathologic lesion in the anterior lobe. Substitution calls for a potent pituitary extract in addition to a potent adrenal cortical extract.

Of the anterior lobe only freshly prepared and properly refrigerated extracts are of real value. Purified fractions of the pituitary extract are stable, but do not adequately substitute for the complex function of the anterior lobe. Oral therapy is not effective, but requires massive dosage.

Combined treatment with pituitary and adrenal extracts is helpful.

Minor manifestations of pituitary insufficiency, as a rule constitute therapeutic problems not separately, but in combination. For the hypopituitary dwarf remarkable growth can be obtained by the administration of testosterone propionate in boys

and estrogen in girls, provided the epiphyseal lines of ossification are not yet closed. These lines do not close in cases of genital hypoplasia. Precipitate sexual maturation in the course of such treatment calls for x-rays.

Sex hormone therapy is indicated in the pituitary dwarf or in infantilism while approaching or passing the age of puberty; whether or not it is advisable also in younger children, alone or in combination with pituitary growth extracts, remains to be shown. Optimal dosage of sex hormones are required.

In cases of hypopituitary hypogonadism with cryptorchidism hormonal treatment should start early. Best results are gotten in short, well-proportioned boys. Tall lean boys are unlikely to respond to pituitary therapy, because their condition is of primary gonadal origin.

The chorionic gonadotropin with the synergistically effective anterior lobe extract—500 units of the former and 1 c.c. of the latter—are injected jointly, 2 or 3 times weekly. If no result is obtained in three to four months, a second like course of treatment is in order, following an intermission of at least two or three months. If descent still does not occur, it is prevented by mechanical factors which call for surgical intervention. If the size of the penis does not increase in spite of otherwise satisfactory response, testosterone propionate is called for, but not until the age of puberty.

All menstrual abnormalities, we are told, are direct consequences of ovarian failure brought about in the vast majority of cases by a pituitary disorder, of three categories: 1) lack of estrogen (insufficient production of follicle-stimulating hormone); 2) lack of progesterone (insufficient production of luteinizing hormone); and 3) improper balance between the two ovarian hormones. The first condition obtains in most cases of amenorrhea, oligomenorrhea, or hypomenorrhea, while the second is the rule in case of short menstrual cycles, with or without prolonged or excessive bleeding. The third type may be encountered in either kind of menstrual disorder.

Estrogen production must be stimulated during the first half of the menstrual cycle immediately following the onset of the period. Stimulation of progesterone production must start at the calculated or verified time of ovulation and continue until the onset of menstruation. Production of estrogen is enhanced by injections of pituitary extracts fortified with small doses (100 units) of chorionic gonadotropin two to three times weekly. Stimulation of the lutein body requires larges doses (200 to 500 units) of the chorionic gonadotropin added to the pituitary extract. Try to stimulate secretion of the patient's pituitary by injections of estrogen not to exceed 2000 R.U. five to seven days apart. Stimulating estrogen therapy is not to be attempted in serious impairment or exhaustion of the anterior lobe.

Injection of prolactin is indicated in the bleeding acyclic woman—200 units daily until bleeding stops, or every other day in the non-bleeding cases, supplemented by injection of chorionic gonadotropin and anterior pituitary extract from the time of ovulation or after blood stops in the acyclic woman. If luteinization is not obtained progesterone is to be tried or testosterone propionate.

In pituitary obesity loss of weight is often adequate if dietary regulations are fully adhered to; some other cases require 1 to 3 grains of U.S.P. thyroid daily; 5 to 6 grains exceptionally. Experience with benzedrine sulfate for curbing excessive appetite is quite favorable. Pituitary extract is not needed in uncomplicated obesity, has place in case of added menstrual or metabolic disturbances.

Pituitary hypoglycemia is a rather common condition: its milder forms are often ignored; its more serious manifestations attributed to other causes. Spontaneous hypoglycemia responds to frequent feeding and restriction of carbohydrate intake, with the addition of fat in underweight patients.

Varied symptoms are caused or aggravated by retention of sodium salts in the tissues and their increased affinity for water.

Universal salt retention with accumulation of water in the tissues constitutes a definite type of obesity. A similar mechanism is responsible for the sudden increase in weight with concomitant swelling which often precedes the menstrual period. If salt is retained in the skin angioneurotic edema prevails; in the mucous membranes of the upper respiratory tract and especially the sinueses—varied symptoms resistant to ordinary treatment; in the brain and meninges—headache, usually of the migraine type; in the blood—increase of blood volume and rise of blood pressure, particularly diastolic. The urinary output is usually reduced, water excretion below water intake.

Salt and water retention in the absence of clear-cut renal disease calls for a diet rich in protein and poor in carbohydrate—low calorie in the overweight, supplemented by fat in underweight; restriction of sodium salts and liquid intake not more than 1500 c.c.; removal of the retained sodium chloride by use of ammonium chloride and potassium acetate alternatingly. The coexisting vasomotor disturbance calls for prolonged administration of atropine with small doses of phenobarbital.

Thyroid extract is a good diuretic in all patients who are underweight, provided their basal metabolism is not increased. Anterior pituitary extract, fortified with small amounts of chorionic gonadotropin also for its influence on water metabolism. Posterior pituitary extract added in small amounts, properly spaced and well within the limits of tolerance increases the elimination of chlorides following the temporary decrease of diuresis.

FLIES AND MOSQUITOS KEPT OFF BY CERTAIN COLORS

It would be wonderful to be able to drive away mosquitos without using odoriferous substances about as objectionable to man as to insect.

Here is the good news. A method simple, inexpensive, efficient—so it is said.

According to an English investigator[1] *Musca domestica* and *Fannia canicularis* avoid pale yellow when they have a choice of colors; other attractions, such as odor, may overpower the unpleasantness of yellow.

In Holland stables and cow stalls are treated with a washing blue inside to reduce fly trouble.

The common European malaria-bearing mosquito *Anopheles maculipennis* dislikes yellow.

The U. S. Army withdrew its regulation navy-blue shirts and issued light ones for use in malarial districts. Five years' investigation in South Africa revealed that pink or yellow curtains never harbored mosquitoes in their folds, and that, using boxes lined with navy blue, pink, grey and yellow flannel, the interiors of the blue and grey boxes were thickly covered with mosquitoes, while only two or three mosquitoes were found in those lined with pink or yellow. In New Caledonia two ladies dressed in blue and white frocks, respectively, were persecuted by mosquitoes, whereas a third in yellow escaped completely, though usually a victim to mosquitoes.

1. Eric Hardy, Liverpool, in *Med. Rec.*, Feb. 4th.

Pregnancy.—Malaise, vomiting and icterus in a pregnant woman near term is of great significance, especially when the blood chemical tests indicate liver damage; drowsiness is a grave sign. Early termination of the pregnancy, continued administration of dextrose intravenously and liberal blood transfusions are life-saving measures.—*Whitaker & Fang.*

Vitamin B_1 will prevent a hang-over following heavy drinking. Try it.—*Brockman,* of Greenville.

NASAL AND SINUS SURGERY

(A. R. Hollender, Miami Beach, in *Sou. Med. Jl.*, April)

The assumption that the end results of nasal and sinus surgery are highly satisfactory is refuted by data obtained from 154 rhinologists.

What will improve results and prevent failures of nasal and sinus surgery?

The diagnosis should include a general investigation of the patient, an allergy study, and consider the relation of endocrine dysfunction.

The fundamental requirement in the treatment of chronic sinusitis is a differential diagnosis accurate enough to prevent the application of formidable procedures to conditions in which they cannot logically be expected to produce any beneficial effect.

Follow-up treatment should include correction of the diverse pathologic entities for which various remedies and procedures may be essential.

WINNING CITIES AND COUNTIES IN NATIONAL HEALTH CONSERVATION CONTEST

Winners in this contest, conducted by the Chamber of Commerce of the United States and the American Public Health Association, are announced by the Contest Grading Committee, of which Dr. W. S. Rankin, of the Duke Endowment Fund, Charlotte, is chairman.

Louisville, Ky., and Memphis, Tenn., are the only cities in our section to appear among the winning cities; while Arlington, Va.; Davidson and Gibson, Tenn.; Fayette and Madison, Ky.; Forsyth, N. C., Glynn, Ga., and Lauderdale, Miss., are among the winning counties. Indeed, of the 14 winning counties in the whole nation, eight are in the South.

The year 1941 was the thirteenth year of the city contest and the eighth year of the rural contest. The city contest is financed by the Metropolitan Life Insurance Company; the rural by the W. K. Kellogg Foundation, of Battle Creek, Michigan.

Kentucky, Michigan, Tennessee and Wisconsin each produced three winners; Connecticut, Illinois and Washington two each. Ten states produced one winner each.

The tonsils are responsible for many upper respiratory infections especially in children subject to tonsillitis and to cervical adenitis. The adenoids appear to be a causative factor in some children who develop frequent colds and middle-ear infections.

Against sinusitis and nasal allergy no statistical evidence is available to show that removal of the tonsils or adenoids has any effect. Evidence obtained in this study does not support the opinion that laryngitis, bronchitis and pneumonia can be reduced in incidence by removing the tonsils and adenoids.—A. D. Kaiser, Rochester, N. Y., in *Bul. N. Y. Academ. of Med.,* May.

Gout.—The judicious use of colchicine, 1/120 gr., during the premonitary, incipient and inflorescent stages will convince the most sceptical of its merit.—*Talbott,* of Mass. Gen'l Hospital.

Ergotamine tartrate, 0.5 mgm. given promptly in vein or muscle, relieves the pain of migraine in 75 to 90% of the cases.—*Scott,* of University of Alberta.

LEIBOFF-TAMIS—From Page 289

4—Squamous epithelial cells only.

Note:—The normal mature non-pregnant female excretes from 20 to 40 R.U. of estrogen in 24 hours.

Equipment obtainable from Paragon C. & C. Co., 2540 Belmont Avenue, New York, New York, at a cost of about $20.00.

NEWS

Dr. Andrew Rader, formerly of Newton, N. C., has been promoted to the rank of Major. Major Rader was with a field hospital unit on Bataan Peninsula, caring for the wounded of MacArthur's army, the last titme his mother had any information about him. She has been unable to learn anything about him since the capture of the territory by the Japanese.

Dr. William S. Cornell, Charlotte surgeon, who has been on active duty since February of last year, has been promoted to the rank of Major and now is second in command of the 148th General Hospital, San Francisco. Dr. Cornell has been certified as a diplomate by the American Board of Surgery after completing the second half of his examination at the University of California.

Dr. C. C. Chewning, Jr., formerly of Bowling Green, Va., has been appointed physician in charge of medical service at the Virginia State Penitentiary. He replaces Dr. F. I. Bloise, who has resigned to accept a commission as major in the United States Medical Corps after serving the prison as head physician and surgeon since July, 1940.

Dr. C. H. McDevitt, Jr., of Philadelphia, has become a member of the medical staff of the H. F. Long Hospital, at Statesville.

Dr. B. L. Holladay, who has been engaged in practice at Wytheville, Virginia, has become a member of the staff of the Davis Hospital at Statesville.

Dr. William deB. MacNider, Chapel Hill, at St. Paul, on April 22nd, delivered the convocation address at the meeting of the American College of Physicians. In this meeting Dr. J. Morrison Hutcheson, Richmond, a Regent, spoke on Heart Disease due to Syphilis; Dr. C. H. Cocke, Asheville, on Spontaneous Pneumothorax; and Drs. Verne S. Caviness, Thomas L. Umphlet and Chauncey L. Royster, Raleigh, discussed Blood Pressure and Sulfocynates.

MARRIED

Dr. Creighton Wrenn and Miss Charlotte Hutson Martin, both of Mooresville, North Carolina, February 17th.

Dr. James Otey Burke, of Richmond, and Miss Alice DeLancey Davis, of Atlanta, were married on May 2nd. Dr. Burke, a son of Dr. Matt Otey Burke, of Richmond, is a Captain in the Medical Corps of the United States Army.

Dr. Alvah L. Herring, Jr., and Miss Douglas Randolph Donnan, both of Richmond, were married on April 18th.

Dr. Henry St. George Tucker, Jr., of Richmond, and Miss Mary Grasty Bell, of Staunton, were married on April 25th.

Miss Peggy Katherine Miller and Dr. John Willis Hunter, Jr., lieutenant, United States Medical Corps, at Trenton, N. J., February 4th.

DIED

Dr. Charles McCulloch, 69, Lexington, died April 9th. Born in Fort Wayne, Ind., Dr. McCulloch was a grandson of Hugh McCulloch, Secretary of Treasury in Lincoln's cabinet. A graduate of the University of Virginia, he received his M. D. from George Washington University. He practiced in Buckingham County, then taught for a time at V. P. I., coming in 1922 to Rockbridge, where he bought a country estate and practiced medicine for many years. Several years ago he retired due to ill health.

Dr. Aaron Jeffery died April 14th in his home at Newport News, Va. Dr. Jeffery, a grandson of Dr. Richard Jeffery, was born at Richmond in 1862.

OUR MEDICAL SCHOOLS

Medical College of Virginia

Dr. H. Hudnall Ware, Jr., Dr. L. L. Shamburger, and Dr. A. L. Carson attended the American Congress of Obstetrics and Gynecology in Saint Louis recently.

Dr. Frank Charles Mann of the Mayo Foundation and Dr. J. H. Means, chief of the medical service of the Massachusetst General Hospital, were recent college visitors.

Dr. I. A. Bigger attended the post-graduate clinics sponsored by the school of medicine extension division of the University of North Carolina, April 13th-14th, speaking on Penetrating Wounds of the Thorax.

The college has received a grant of $9,100 for furniture for the new annex to Saint Philip Hall, dormitory for Negro unrses, and a grant of $19,600 for a program to be launched in nutrition by the college.

The annual Stuart McGuire lectures were given May 7th and 8th at the college. The complete program:

Thursday, May 7th

8:30 P. M.—Stuart McGuire Lecture, The Meaning of Nutrition. Dr. John B. Youmans, Associate Professor of Medicine and Director of Postgraduate Instruction, Vanderbilt University Medical School, Nashville.

Friday, May 8th

10:00 A. M.—The Physiology of the Vitamins, Dr. Rolland J. Main, Professor of Physiology, Medical College of Virginia, Richmond.

11:00 A. M.—Nutrition Problems in Postoperative Patients. Dr. H. B. Mulholland, Professor of Practice of Medicine, University of Virginia Department of Medicine, Charlottesville.

12:00 M.—The Recognition of Mild or Early Vitamin Deficiencies, Dr. Julian M. Ruffin, Associate Professor of Medicine in charge of Physical Diagnosis, Duke University Medical School, Durham.

1:15 P. M.—Luncheon.

3:00 P. M.—Ocular Manifestations in Deficiency Diseases, Dr. R. H. Courtney, Professor of Ophthalmology, Medical College of Virginia, Richmond.

4:00 P. M.—The Significance and Treatment of Iron Deficiency Anemia, Dr. Maxwell Berry, Associate in Medicine, Medical College of Virginia, Richmond.

8:30 P. M.—Stuart McGuire Lecture, The Significance of Protein in the Diet, Dr. John B. Youmans.

UNIVERSITY OF VIRGINIA

In connection with the Post-Graduate Course conducted by the Extension Division of the University of North Carolina, Dr. S. A. Vest held a Urology Clinic on the afternoon of March 13th at the Rex Hospital in Raleigh, N. C. Dr. Vest also addressed the physicians of the vicinity that night on the subject of Urology in General Practice.

Dr. G. Slaughter Fitz-Hugh discussed a paper on Tracheobronchial Tuberculosis before the Virginia Chest Society in Richmond, on March 31st.

On April 8th, at the Spring Post-Graduate Course held at the Gill Memorial Hospital in Roanoke, Virginia, Dr. Gayle Crutchfield addressed the group on the subjects: Diagnosis and Treatment of Orbital Tumors; Intracranial Complications Arising from Infections in the Paranasal Sinuses.

At the meeting of the Medical Society of Northern Virginia at Luray, Virginia, on April 8th, Dr. S. A. Vest addressed the group on the subject: Urology in General Practice. Dr. Vest also presented a paper at the meeting of the Middle Atlantic Section of the American Urological Association, in Philadelphia, on April 11th. His subject was "New Hemostatic Suture for Nephrotomy Wounds."

Dr. Fletcher D. Woodward spoke before the Detroit Otolaryngological Society on April 15th on "Management of Fractures of the Nose and Face."

On April 17th, Dr. John S. Lockwood, Associate in Surgery at the University of Pennsylvania delivered an address before the Virginia Alpha Chapter of Alpha Omega Alpha, in the Medical Amphitheatre. He spoke on "The Progress Toward an Understanding of the Mode of Action of the Sulfonamides."

VITAMIN FILMS IN COLOR

Eli Lilly and Company announces the availability of three 16-mm. silent motion pictures in color descriptive of vitamin deficiency diseases to physicians for showing before medical societies and hospital staffs. One deals with thiamine chloride deficiency, one with nicotinic acid deficiency, and the third with ariboflavinosis. The major part of all films concerns the clinical picture presented by the patient with reference to treatment by diet and specific medication. They do not contain advertising of any description, nor is the name of Eli Lilly and Company mentioned.

The films were made at the Nutrition Clinic of the University of Cincinnati at the Hillman Hospital, Birmingham, Alabama, where studies were initiated in 1935, under the joint auspices of the Department of Internal Medicine of the University of Cincinnati and the University Hospitals of Cleveland. Subsequently, these investigations became a co-operative project between the Departments of Medicine of the University of Cincinnati and the University of Alabama, and the Department of Preventive Medicine and Public Health of the University of Texas.

ASPHYXIA, after cessation of respiration, rhythmic inflation and suction of oxygen or oxygen-carbon dioxide at safe pressures is superior to manual artificial respiration or rhythmic inflation.—*Birnbaum & Thompson.*

DYSPHAGIA may occur in connection with the following disorders of the heart and aorta: dilated left auricle, pericarditis, saccular aneurysm, dissecting aneurysm, and anomalous aortic arch—*Flaxman.*

BOOKS

NASAL SINUSES: An Anatomic and Clinical Consideration, by O. E. VAN ALYEA, M.D., Assistant Professor, Department of Laryngology, Rhinology and Otology, University of Illinois College of Medicine, Chicago. *The Williams & Wilkins Company,* Mt. Royal & Guilford Aves., Baltimore. 1942. $6.50.

Diseases of these parts are discussed on a basis of anatomy and perverted physiology. Special attention is paid to the commoner disease conditions. As a surgical therapist the author is decidedly to be grouped with the conservatives. Of maxillary sinusitis he says: In the acute attack very little local treatment is indicated . . . . . healing is usually spontaneous and those cases which linger do so because of drainage impairment. The great variations in size and shape of the frontal sinuses are emphasized. Ethmoiditis is too often undiagnosed. The removal en masse of groups of cells some of which are functioning properly is not countenanced. The tendency to suspect the tonsils and adenoids to the neglect of attending to the sinuses of children is deplored. This book will help to better the present unsatisfactory state of sinus trouble management.

ATHLETIC INJURIES: Prevention, Diagnosis and Treatment, by AUGUSTUS THORNDIKE, M.D., Surgeon in the Department of Hygiene, Harvard University; Associate in Surgery, Harvard Medical School; Associate Surgeon, Children's Hospital, Boston, Mass. Second edition, thoroughly revised, published 1942. 12 mo, 216 pages, illustrated with 105 engravings. *Lea & Febiger,* Washington Square, Philadelphia. Cloth, $3.00 net.

With athletic sports among our most important occupations it is needful that doctors have the best in information as to how to prevent and to treat athletic injuries. On the success or failure of his ministrations to an injured football player may depend the professional reputation of a doctor. This volume tells him how he may best insure that the treatment be a success.

ELECTROTHERAPY AND LIGHT THERAPY: With the Essentials of Hydrotherapy and Mechanotherapy, by RICHARD KOVACS, M.D., Professor of Physical Therapy, New York Polyclinic Medical School and Hospital; Attending Physical Therapist, Manhattan State, Harlem Valley State and West Side Hospitals, etc. Fourth edition, thoroughly revised. Published 1942. Octavo, 735 pages, illustrated with 314 engravings and a color plate. *Lea & Febiger,* Washington Square, Philadelphia. Buckram, $8.00 net.

In the past decade the use of these therapies has tremendously increased, with the recognition of the kinds of cases in which they hold promise of good. This recognition has come about largely from the abandonment of the claims of the overenthusiastic. Even now one must bear it in mind that each tends to overvalue his own. Electrotherapy and

the kindred subjects dealt with in this book are not utilized generally to the degree that they should be. Here is a reliable text containing important lessons worthy of careful study and daily application.

STITT'S DIAGNOSIS, PREVENTION AND TREATMENT OF TROPICAL DISEASES, sixth edition, by RICHARD P. STRONG, M.D., Sc.D., D.S.M., C.B., Professor of Tropical Medicine, Emeritus, Harvard University; Consultant in Tropical Medicine to the Massachusetts General Hospital and the Boston City Hospital. In two volumes. *The Blakiston Co.*, 1012 Walnut St., Philadelphia. 1942. $21.00 per set.

In the foreword Dr. Stitt says of Dr. Strong: "I doubt whether any worker has equalled Dr. Strong as director of commissions to study problems of public health in the tropics, and elsewhere;" and he considers himself "fortunate in persuading Dr. Strong to take on the revision" of this work.

This revision of this masterpiece comes at a particularly opportune time; when, by reason of the wider diffusion of tropical diseases by airplane travel, and of the great number of our fighting men in tropical countries, there is vital need for our doctors, civil and military, to have intimate knowledge of these diseases, their prevention and cure.

A great deal is being written on this subject in the medical journals and even the lay magazines and newspapers, and many conflicting opinions are expressed, much to the confusion and discouragement of the doctor eager to do everything possible for his patients. This book is made up of statements on which reliance may be placed and on which the doctor may proceed with confidence.

THE VITAMIN CONTENT OF MEAT, by HARRY A. WAISMAN, Ph.D., Research Associate in Biochemistry, University of Wisconsin, and C. A. ELVEHJEM, Ph.D., Professor of Biochemistry, University of Wisconsin. *Burgess Publishing Co.*, 426 South 6th Street, Minneapolis. 1941. $3.00.

It is known of old, and as plain as a pikestaff that meat-eaters are more vigorous than non-meat-eaters. And most of those who claim to be vegetarians are nothing of the sort. A look at a human set of teeth teaches anyone who can be taught that meat is a food natural to man. Most of us have got entirely away from the pernicious teaching that one with kidney disease or high blood pressure should not eat meat.

This book presents a lot of important facts as to diet and nutrition which, widely diffused, would go far to putting out of business the "Health-Food" stores and "Expert Dietitians" of our time.

YOUR HEART, by JOSEPH M. STEIN, M.D. *Alliance Book Corporation*, 35 East 20th St., New York City. 1941. $2.75.

The author is safer when he is specific. His generalizations are apt to be serious overstatements. Platitudes, even when based on facts, rarely have any usefulness. Maybe an author has to write a breathless, Rotarian style to get the public to read him. The kind of writing that makes up newspapers that formerly were written in English would make it so appear.

The teaching is sound—even if sounding. The public would benefit from the lessons taught, so probably it ill-becomes a reviewer to look askance at the way the knowledge is presented.

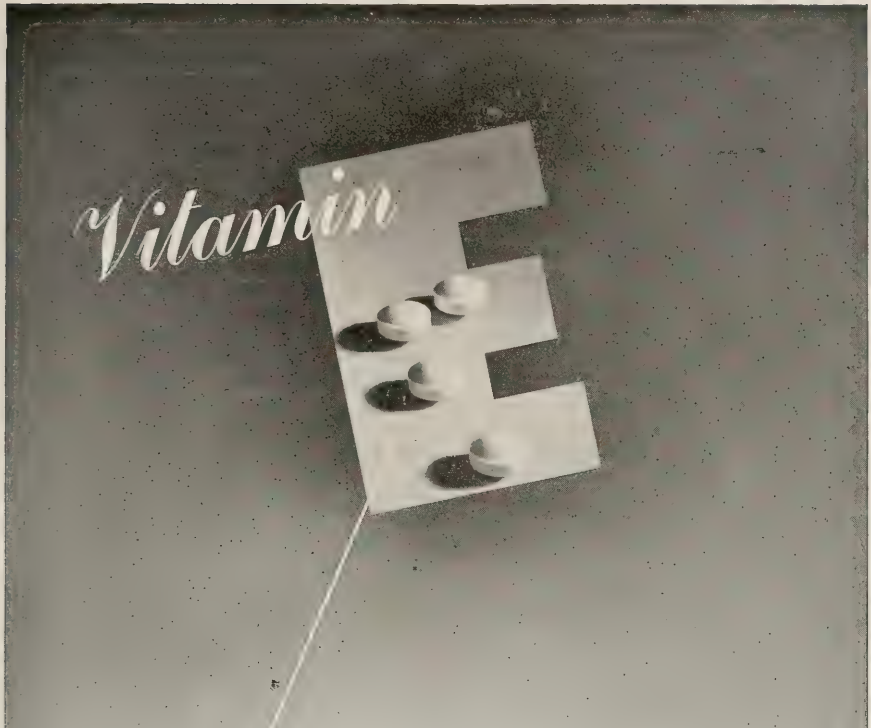
THE FUNDAMENTALS OF INTERNAL MEDICINE, by WALLACE MASON YATER, A.B., M.D., M.S. (in Med.), F.A.C.P., Professor of Medicine and Director of the Department of Medicine, Georgetown University School of Medicine; Physician-in-Chief, Georgetown University Hospital. First edition, revised. *D. Appleton-Century Company, Inc.*, New York and London. $9.00.

In this revision the author has clung to his original plan of rejecting every immaterial word, and so he and his dozen collaborators are able to offer in a reasonable number of pages the essentials of internal medicine. There are sections on Diseases of the Heart, of the Kidneys, of the Blood and Blood-Forming Organs, of the Respiratory System, of the Digestive System, of the Locomotor System, of the Endocrine Glands, of the Spleen and Reticulo-Endothelial System, of Metabolism, of Allergy; on Diseases due to Intoxications, to Physical Agents, to Vitamin Deficiency and Malnutrition; on The Infectious Diseases; on Diseases of the Nervous System, Mental Diseases, Diseases of the Skin, Diseases of the Ear and Eye; and a final chapter on Dietetics. It will be seen that some subjects are included not commonly to be found in a textbook of medicine, and some excluded which one might expect to find in such a book. The author uses excellent judgment in choosing which subjects to put in and which to leave out, and the handling of all the subject matter is such as to make a pleasing as well as a reliable presentation.

SYMPTOM DIAGNOSIS: Regional and General, by WALLACE MASON YATER, A.B., M.D., M.S. (in Med.), F.A.C.P., Professor of Medicine and Director of the Department of Medicine, Georgetown University School of Medicine; originally written by the late WILFRED M. BARTON, A.M., M.D., F.A.C.P., and WALLACE M. YATER, A.B., M.D., M.S. (in Med.), F.A.C.P. Fourth edition. *D. Appleton-Century Company, Inc.*, 35 West 332nd St., New York, and London. $10.00.

Here is brought up to date a work put out to aid the physician in diagnosis by enabling him to reduce the number of possibilities; to prevent oversight of important factors; to encourage more accurate observation. It is designed as a work for quick-reference, and well it serves that purpose.

An idea of the book's usefulness may be got



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CLINICAL HEMATOLOGY, by MAXWELL M. WINTROBE, M.D., Ph.D., Associate in Medicine, Johns Hopkins University; Associate Physician, Johns Hopkins Hospital; and Physician-in-Charge, Clinic for Nutritional, Gastro-Intestinal and Hemopoietic Disorders. Octavo, 792 pages, illustrated with 167 engravings and 7 colored plates. *Lea & Febiger,* 600 W. Washington Square, Philadelphia. Cloth, $10.00 net.

The development of hematology and allied studies has in recent years largely done away with the medical consultant. The importance of a knowledge of hematology in the diagnosis and treatment of disease conditions imposes an obligation on every practitioner of medicine and surgery, general or special, to keep fully abreast of this knowledge. Here it is set forth in an orderly, judicious manner. The author is a bedside doctor as well as a laboratory doctor, and his book manifests a fine blending of the two.

MANAGEMENT OF THE SICK INFANT AND CHILD, by Langley Porter, B.S., M.D., M.R.C.S. (Eng.), L.R.C.P. (Lond.), Dean Emeritus, University of California Medical School and Professor of Medicine; formerly Professor of Clinical Pediatrics; and William E. Carter, M.D., Director of University of California Hospital, Out-Patient Department; formerly Chief of Children's Clinic, University of California Hospital. Sixth revised edition. *The C. V. Mosby Company,* 3525 Pine Boulevard, St. Louis. 1942. $11.50.

The writers express their appreciation of the popularity of previous editions by putting out a sixth that is an improvement on the other five.

The division is as unusual as it is sensible and useful. Part I is given over to the consideration of symptoms — vomiting, diarrhea, constipation, state of nutrition, hemorrhage, pain, fits, fever, cough; Part II to diseases, as such; Part III to methods, formulas and recipes, drugs and poisoning.

A thoroughly practical book written with due regard to the importance of the child being adequately nourished, discliplined and privileged, and so made into a happy and useful adult.

CARCINOMA AND OTHER MALIGNANT LESIONS OF THE STOMACH: By Waltman Walters, B.S., M.D., M.S. in Surgery, D.Sc., F.A.C.S., Surgeon, Mayo Clinic; Howard K. Gray, B.S., M.D., M.S. in Surgery, F.A.C.S., Surgeon, Mayo Clinic; James T. Priestley, B.A., M.D., M.S. in Experimental Surgery, Ph.D. in Surgery, F.A.C.S., Surgeon, Mayo Clinic; and Associates in the Mayo Clinic and Mayo Foundation, Rochester, Minn. 576 pages with 143 illustrations. *W. B. Saunders Company,* Philadelphia and London. 1942. Price $8.50.

The opinion is expressed that more often than not the patient consults a physician at a time when cancer is in its early stages; and that, out of this situation arises the great obligation on the part of the profession of medicine to lessen the great discrepancy between incidence and operability.

This monograph puts before the profession an experience of 10,000 cases of cancer of the stomach, carefully studied; and 6,000 of which underwent operation.

The various diagnostic procedures are carefully evaluated and decision as to advisability of operation given the grave consideration its importance deserves. z

There is an excellent section on special diagnostic problems and observations. Illustrative cases are cited in their salient features.

The number of cases studied with elaborate care from every angle by men exceptionally qualified for the tasks could be expected to provide the material for an authoritative dealing with this important disease condition. This expection is realized and in a small book, because nothing redundant is to be found between its covers.

SYNOPSIS OF MATERIA MEDICA, TOXICOLOGY, AND PHARMACOLOGY. For Students and Practitioners of Medicine, by Forrest Ramon Davison, B.A., M.Sc., Ph.D., M.B., Medical Department, The Upjohn Company,



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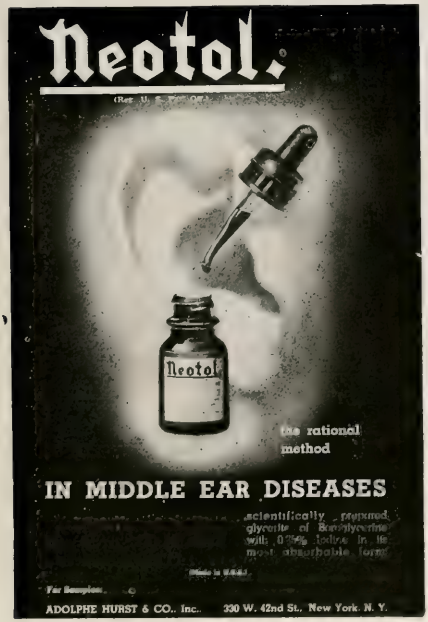


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WHEN YOU GO TO NEW YORK

THIS JUNE you will probably attend the Annual Convention of the American Medical Association to be held in the Auditorium, Atlantic City, N. J., June 8th to 12th. Don't miss stopping at the booth of the American Physicians' Art Association made available through the courtesy of Mead Johnson & Co., of Evansville, Ind. Some of the finest art pieces are shown at these annual Art Shows of the A. P. A. A. There will be personal work by physicians in 13 types of media: oils, water colors, sculpture, pastels, ceramics, etchings, photography, wood carving, etc., etc. A show really worth seeing. Not too late to enter either. Entry blanks may be obtained from Francis H. Redewill, M.D., Secretary, Flood Bldg., San Francisco, Calif.

AND INTEND TO VISIT NIAGARA FALLS, stop over in Buffalo and visit the Buffalo Museum of Science. Of special interest will be the Exhibition of the Fourth Annual Salon of Nature Photography. Many physicians enter their prints in this annual show which is conducted by HOBBIES, the magazine of the Buffalo Museum of Science. The purpose of the Nature Photography Salons is to encourage an appreciatiton of the world in which we live as shown in pictures and to present the best in nature photography. The prints will be on exhibition May 20th to June 16th, 1942, inclusive.

VISIT THE BERLITZ SCHOOL OF LANGUAGES at 630 Fifth Avenue. The interest in foreign languages, particularly Spanish, has led many physicians to attend classes at this institutiton, internattional in character. Physicians are cordially invited to stop in for a free demonstration lesson and to become acquainted with the unique "Berlitz Method."

RESERVE SEATS FOR "Of 'V' We Sing," a Musical review now holding forth at the Concert Theatre, 202 West 58th Street. A production by the American Youth Theatre. Refreshing, Young, Bubbling over with youthful antics in which pure comedy keeps one interested in every episode.

WORSHIP ANY SUNDAY EVENING at the oldest Protestant Church in America, Marble Collegiate Church, at 1 West 29th Street. It is, as well, the oldest church on Fifth Avenue and was founded on Manhattan Island in 1628. Caruso was married here. It has the largest Sunday evening congregation in Manhattan.

VIEW, AT LEISURE, some of the notable paintings of the 14th to the 19th centuries. On exhibition at the FRICK COLLECTION, in the home of the late H. C. Frick, 1 East 70th St., on Fifth Avenue. Among the collection are Limoges, Enamels, Renaissance Bronzes, Chinese Porcelains, Period Furniture. No admission charge. Hours 10 to 5 daily and 1 to 5 on Sundays.

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Kalamazoo, Mich.; Formerly Assistant Professor of Pharmacology in the School of Medicine, University of Arkansas, Little Rock. Second edition, with 45 illustrations, including four in color. *The C. V. Mosby Company,* 3525 Pine Boulevard, St. Louis, 1942. $5.75.

A judicious combination of the best features of our older books on materia medica, on toxicology, and on pharmacology; with the addition of the great discoveries in this field made in recent years. An idea of the spirit of wise eclecticism of the book may be gained from thinking on the fact that only five pages are devoted to iron, one of the most useful of drugs.

SYNOPSIS OF ANO-RECTAL DISEASES, by Louis J. Hirschman, M.D., F.A.C.S., ex-chairman, Section on Gastroenterology and Proctology, A.M.A.; Ex-president American Proctologic Society; Professor of Proctology, Wayne University; with 183 text illustrations and 12 color plates; second edition. *The C. V. Mosby Company,* 3525 Pine Boulevard, St. Louis, 1942. $4.50.

The author gives descriptions of routine methods which he has found best in a large experience of teaching and practice. He frankly announces that the requirements of the medical student as well as of the general practitioner of medicine have been kept uppermost in mind.

DIRECTORY OF MEDICAL SPECIALISTS, Certified by American Boards, for the year 1942. *Columbia University Press,* Morningside Heights, New York. $7.00.

Since publication of the first edition 4,000 doctors have taken these Board examinations. This second edition contains information about 18,000 certified Diplomates. Also, the information about each doctor in the second edition is more complete.

This book is a directory to medical specialties, also an index to a trend in medical development—one which has grown more than 25% in the last two years. To Washington officials ,to army and navy administrators, as well as to local and regional selective service executives, the *Directory of Medical Specialists* is becoming increasingly useful.

A separate section is devoted to each American Board, with a geographic and a biographic listing of its Diplomates. In addition, there is a complete alphabetic list of all the Diplomates. In this list there are addresses and indications of specialty certification, while in the geographic section complete biographic information is given. The organization and examination requirements of each of the American Boards are explained fully.

All these features make the Directory valuable to specialists and general practitioners, hospitals, social agencies, libraries, medical societies, business organization, etc. It will help hospital officials pass on the ability of candidates for staff positions. It will provide medical society officers with authoritative lists. Family physicians can form an estimate of the qualifications and ability of specialists in any branch of medicine for the benefit of patients.

DISEASES OF THE PANCREAS

(R. J. Caffey, Washington, in *Med. An. D. C.,* April)

Acute suppurative pancreatitis, acute gangrenous pancreatitis, and acute pancreatic apoplexy all refer to various phases of the same pathologic process. Pancreatitis, a misnomer, inasmuch as necrosis and not inflammation, is the primary pathologic change. Acute pancreatic lesions may be readily divided into: a) acute pancreatic necrosis—a shocking and lethal disease, and b) acute pancreatic edema—a self-limited condition, attended by a low mortality.

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Diabetes mellitus rarely follows recovery.

Our one dependable diagnostic aid is the serum amylase. In the average well-equipped laboratory, this test requires less than an hour. There is prompt rise to peak within 48 hours.

Surgical attack upon the pancreas is being discarded. Eight surgeons had a lowering of their mortality from 60% with immediate operation to 22% when surgery was eliminated or deferred.

All food by mouth is withheld. If it is necessary to give glucose in large amounts, the administration of insulin is strongly recommended. Generous use of the barbiturates has a depressing effect on the flow of pancreatic juice. Ephedrine has a similar action. If the symptoms are not subsiding after a week, drainage of the lesser sac is indicated. Most are of the opinion that it is impossible for an infected necrotic pancreas to heal spontaneously. Certain cases of moderately severe epigastric pain, often with mild icterus and unaccompanied by shock, were due to acute disease of the pancreas.

Elman originally identified such a syndrome and at operation he observed a nonhemorrhagic edema of the pancreas as well as areas of fat necrosis in the adjacent tisues. The serum amylase level, though not as high as in acute necrosis, is consistently elevated.

The recognition depends on the demonstration of an elevated serum amylase level in cases of a typical upper abdominal pain.

The treatment is conservative and symptomatic—amyl nitrite for the relief of pain, deep x-ray therapy in these cases with encouraging results. Obvious gall-bladder disease should be corrected by an interval operation.

CHUCKLES

He applied at the recruiting office to enlist.

"I suppose you want a commission," said the officer.

"No, thanks," was the reply. "I'm such a poor shot I'd rather work on a straight salary basis."

"I have a confession to make, dear. I can't cook."

"Don't let that worry you, honey. I can't make a living, so there won't be anything to cook."

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"Naw, once when I was calling on a married gal and her husband come in."

"How scared wuz you, boy?"

"Well, de husband of dis lady took one look at me and said, 'Mandy, what dat white man doing here?'"

Ed Poor was never more than a half wit, but as mannerly as any member of the proud family to which he had belonged "befo' de wa'." His lack of good wits did not keep him from getting a wife. Soon after this event Mr. Albert Stratton met up with Ed.

Mr. S: "Ed, I hear you are married."

Ed: "Yes, suh, Mr. Albert, sho' is."

Mr. S: "Whom did you marry, Ed."

Ed (scratching his head in great perplexity): "Mr. Albert, I declar', I fergits de lady's name." Then with a happy smile, as he solved his problem: "But she's Miz Po' now."

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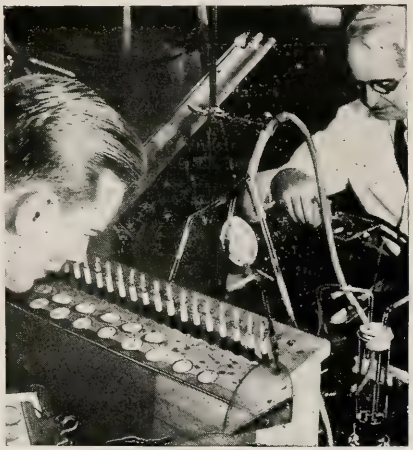
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* J. A. M. A., 93:1110—October 12, 1929
Brückner, H—Die Biochemie des Tabaks, 1936
** The Military Surgeon, Vol. 89, No. 1, p. 7, July, 1941

SEND FOR REPRINT of an important contribution to medical literature—"The Cigarette, The Soldier, and The Physician," *The Military Surgeon,* July, 1941. This significant analysis reveals many new angles about smoking that should be valuable to you when modifying patients' smoking without disturbing their smoking enjoyment. Write to Camel Cigarettes, Medical Relations Division, 1 Pershing Square, New York City.

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JAMES M. NORTHINGTON, M.D., Editor

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Laterality Dominance in the Four Gospels

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REFERENCES to laterality dominance in the four Gospels become less frequent from the first to the last. In the main, they become less significant also. In St. Matthews Gospel occur some of the most dramatic references to handedness that are to be found in either the Old or the New Testament. Some of the verses are most insistent upon all that is implied in the superiority of the entire dexter side.

This insistence is carried out not only by direct statements but in allegorical ways as well. Several of the allusions are overwhelming in their significance and possess that element of finality which is not an infrequent accompaniment of the writers' words when they develop this part of the Hebrew philosophy. We submit that the sidedness references in the following expressions are unforgettable.

ST. MATTHEW 25

31 When the Son of man shall come in his glory and all the holy angels with him, then shall he sit upon the throne of his glory:

32 And before him shall be gathered all nations; and He shall separate them one from another, as a shepherd divideth his sheep from the goats:

33 *And he shall set the sheep on his right hand, but the goats on the left.*

34 *Then shall the King say unto them on his right hand, Come, ye blessed of my Father, inherit the kingdom prepared for you from the foundation of the world:*

35 For I was an hungred, and ye gave me meat: I was thirsty and ye gave me drink: I was a stranger and ye took me in:

36 Naked and ye clothed me: I was sick and ye visited me: I was in prison, and ye came unto me.

* * * * *

41 *Then shall he say also to them on the left hand, Depart from me ye cursed into everlasting fire, prepared for the devil and his angels:*

42 For I was an hungred, and ye gave me no meat: I was thirsty and ye gave me no drink:

43 I was a stranger and ye took me not in: naked and ye clothed me not: sick and in prison and ye visited me not.

* * * * *

46 And these shall go away into everlasting punishment; *but the righteous into life eternal.*

We should note how smoothly the transition is made from those who have been placed *on the*

right, into the *righteous.* This transition follows as a matter of course. It is so intended and is an essential part of the parable. With such insistence does it make its appearance that we might suppose it to be of equal importance with the underlying idea of the chapter, that the good shall be rewarded and the evildoer shall meet his just deserts.

We are made aware from the expressions used that the rewards of those placed on the dexter side of the gathering have been arranged for them from the foundation of the world. It is reasonable to suppose that the arrangement, the divisions into the good and evil as set forth in the words of St. Matthew are of equal antiquity; that the good of the dextral, and the evil of the sinistral are conceptions which go back to the very dawn of humanity.

There are other verses in this gospel which are equally striking. Several of them are grouped in the fifth chapter. They bring to us inescapable impressions of the overwhelming importance of the right side of our person. This is done by describing a form of suppositious sacrifice. A figurative sacramental dismemberment which we are informed the human body should undergo before it will tolerate the presence of evil within itself. Once read, the laterality implication of these lines can never be forgotten.

ST. MATTHEW 5

29 *And if thy right eye offend thee, pluck it out and cast it from thee:* for it is profitable for thee, that one of thy members should perish and not that thy whole body should be cast into hell.

30 *And if thy right hand offend thee, cut it off and cast it from thee:* for it is profitable for thee that one of thy members should perish, and not that thy whole body should be cast into hell.

And a little later the very essence of the philosophy taught by the Redeemer is placed before us in such a manner that the matter of laterality dominance is graven in our minds just as indelibly as is the philosophy which it is used to make plain to us.

It is, we think, of great importance that in some parts of both the Old and the New Testament where the commands take on the air of the imperative for our guidance, and where words and expressions are used designedly to create unforgettable mages, that direct references to the matter of sidedness are also found. Such a state of affairs is succintly brought out in the following verses.

ST. MATTHEW 5

38 Ye have heard that it hath been said, An eye for any eye, and a tooth for a tooth:

39 But I say unto you, That ye resist not evil: *but whosoever shall smite thee on thy right cheek, turn to him the other also.*

* * * * *

43 Ye have heard that it hath been said, Thou shalt love thy neighbor and hate thine enemy.

44 But I say unto you, Love your enemies, bless them that curse you, do good unto them that hate you, and pray for them which despitefully use you and persecute you:

45 That ye may be the children of your Father which is in heaven: for he maketh his sun to rise on the evil and on the good and sendeth rain on the just and on the unjust.

48 Be ye therefore perfect, even as your Father which is in heaven is perfect.

It is interesting to observe that the writer transcends the law of probability to make the preciousness of the right side of the body plain. Presuming the Jews to have been a right-handed people, concerning which it is true some questions have been raised, the first blow to have been received in the natural course of events would have been on the left cheek of the recipient. This, to be used to point to a moral, was not to be thought of: it would have been destructive to the very pith of the narrative.

The law of probabilities must never be permitted to imply that the sinistral could ever prevail over the dextral. The moral to be drawn was not only that submission should be made to the aggressor but that the most prized half of the body should first be exposed to the assault. *The right cheek, to be struck,* was comparable to the plucking out of the right eye. Once *the right was delivered,* the true significance of the Christian way of thought was made plain.

These verses which have been quoted countless times, and which we may assure ourselves have made a permanent place for themselves in millions of Christian brains, are revolutionary in what they preach. The old Hebraic law of an eye for an eye and a tooth for a tooth passed muster for centuries as ideal human conduct.

It was a law in a positive sense to be obeyed without dereliction. It was not something to be left to the discretion of the one who might be involved in its tentacles. Failure to obey its admonitions as we are well aware resulted in the punishment of the nullifier. Here, like a bolt out of the blue, a new law of human behaviour is laid down; wholly out of perspective with all that has gone before; a law which transcended all its predecessors and was introduced with a play on words which, to make it unforgettable, was wrapt up in an adjudication of the relative value of the two sides of the body. No marvel it is that we have come down to the present time as *right*-minded as we are.

It would follow as a mater of course that in the bestowal by ourselves of whatsoever goods we

might wish to dispense in charity the one who sought assistance would expect generosity to come from the right side of our bodies. He would feel that appeals to the sinistral side would be of no avail. St. Matthew makes all that plain with crystal clearness.

ST. MATTHEW 6

1 Take heed that ye do not your alms before men, to be seen of them: otherwise ye have no reward of your Father which is in heaven.
2 Therefore when thou doest thine alms do not sound a trumpet before thee, as the hypocrites do in the synagogues and in the streets, that they may have glory of men. Verily I say unto you, They have their reward.
3 *But when thou doest alms, let not thy left hand know what thy right hand doeth:*
4 That thine alms may be in secret: and thy Father which seeth in secret himself shall reward thee openly.

Light comes from the East; just so surely for the Hebrews good came from the right. Not only would the supplicant address his attention in this direction, but the giver would know how his distributions must occur to be in rhythm. More than this, we think of even greater importance, is the manner in which the right hand is identified with the personality of the man himself. It is suggested that the left hand can be kept unaware of what has occurred in the way of beneficence.

Indeed the admonition is that the left hand should be so maintained in ignorance. It was something we judge of a separate kingdom which manifestly had not shared in the accomplishment of a charitable act and knew nothing of it. We feel sure that any suggestion of blindness or failure to be aware of events would never be ascribed to the right hand or the right side of the body. The right hand was the full directing force, and took to itself full responsibility for what occurred.

Above and beyond this is the sense of antagonism between the two sides of the body which is here so clearly defined. Where there is deception, as here, of the left by the right, there also must be resentment and discord. Such an admonition encourages such a state and makes its continuance inevitable. It is implied we feel that this deception by the more intelligent of the members is spoken of as something desirable. Obviously it is not something brought forward for the first time but as all else in the Scriptures is dependent upon a ripened form of wisdom which we may take for granted had been inarticulate for centuries.

The right hand is to be the member which communicates with the surrounding world in more ways than in the dispensing of beneficence; the evil sinistral side is shoved away and kept in its wonted ignorance. It has this advantage of position, as it does not share in any merited reward, neither does it suffer for the misdeeds of the personality.

St. Matthew shows the importance he attaches to such matters in reporting the answer of the Redeemer to the mother of Zebedee's two sons who had asked that the young men might sit, the one on his right side and the other on his left when he had come into his Kingdom. Jesus answered her:

ST. MATTHEW 20

23 And he saith unto them, ye shall drink indeed of my cup, and be baptized with the baptism that I am baptized with: But to sit on my right hand and on my left is not mine to give, but it shall be given to them for whom it is prepared of my Father.

The faithful apostle records that a decision as momentous as this was not to be made even by the Savior himself. It is interesting to note how laterality dominance appears in those very verses which follow immediately after the laying down of the new order by Jesus, in such a position that the reading of the one without the reading of the other would be unlikely. No sooner had Jesus instructed them as to the love which they should bear toward their neighbors and told them that on this and the love of God hung all the law and the prophets, and while the Pharisees were still gathered together, Jesus interrogated them in this manner.

ST. MATTHEW 22

42 Saying, what think ye of Christ? whose son is he? They say unto him, The son of David.
43 He saith unto them, how then doth David in spirit call him Lord, saying,
44 The Lord said unto my Lord, *Sit thou on my right hand till I make thine enemies thy foot stool?*
45 If David then call him Lord, how is he his son?
46 And no man was able to answer him a word, neither durst any man from that day forth ask him any more questions.

We are given several glimpses into the scene of laterality dominance by St. Matthew. They occur as is usual during the description of vital and dramatic events in the gospel. In circumstances which make their disregard impossible. The wordings which describe them have become a part of imperishable pictures. The fact that such details as we have to view were considered worthy of remark impresses us as no other measure would with their importance to the one who is telling this age-old story. Jesus is led a captive out of the Garden of Gethsemane before Caiaphas, the High Priest.

ST. MATTHEW 26

63 But Jesus held his peace. And the high priest answered and said unto him, I adjure thee by the living God, that thou tell us whether thou be the Christ, the Son of God.

64 Jesus saith unto him, thou hast said: nevertheless I say unto you, *Hereafter shall ye see the Son of man sitting on the right hand of power* and coming in the clouds of heaven.

Just before the crucifixion took place the soldiers degraded Jesus by every means at their command. St. Matthew in describing the scene brings out every salient detail and among them a reference to dextrality. To place the reed, the symbol of weakness and indecision, in *the right hand* of the Redeemer made the irony for the perpetrators all the more emphatic. Before the terrible farce was over thy had even robbed Jesus of his possession of this sorry badge of power.

ST. MATTHEW 27

29 And when they had platted a crown of thorns, *they put it upon his head and a reed in his right hand:* and they bowed the knee before him and mocked him saying, Hail, King of The Jews.

30 And they spit upon him, and took the reed and smote him on the head.

There is one other reference to laterality in this Gospel of great import. It refers to actions which took place when the Redeemer was apprehended in the Garden of Gethsemane. Since its similitude appears in each of the four Gospels it was thought best to describe the incident as a whole later in this narrative.

There is little laterality dominance in the Gospel according to Saint Mark. What references there are are minor and reiterative of those in the previous Gospel. The description of his interview with the high priest after his apprehension in the Garden of Gethsemane varies little from the previous account. Only in the last chapter does St. Mark take the pains to bring into his narrative two allusions to handedness. One occurs when after the crucifixion Mary Magdalene, and Mary the mother of James, and Salome brought sweet spices to the tomb to anoint the body of Jesus. To their surprise they found the stone rolled away.

ST. MARK 16

5 And entering into the sepulchre *they saw a young man sitting on the right side,* and clothed in a long white garment; and they were affrighted.

The penultimate verse in the gospel contains the final reference to these matters.

ST. MARK 16

19 So then after the Lord had spoken to them he was received up into Heaven *and sat on the right hand of God.*

There are five references to handedness in the Gospel according to St. Luke. They are not of much import except one which will be described later in its place. He writes of the priest, Zachariah, in the time of Herod the King of Judea, while the multiude were praying without at the time of the incense and the priest was within the temple.

ST. LUKE 1

11 And there appeared unto him an angel of the Lord, *standing on the right side of the altar of incense.*

The purpose of the angel's coming was to announce the approaching birth of a son to Zacharias, which son was to be named John.

St. Luke also describes how Jesus healed in the synagogue on the sabbath to the confounding of the pharisees.

ST. LUKE 6

6 And it came to pass also on another sabbath, that he entered into the synagogue and taught: *and there was a man whose right hand was withered.*

In the final Gospel is one reference to laterality which is of great interest to us all. It occurs in the last chapter and has reference to events which took place after the resurrection. We know of no reference to laterality in either the Old or New Testament which would have exerted greater influence in defining the sanctity of the right. No other description can compare with it for enlarging the scope of this idea to the extent that not only is the right side of the body elevated above its companion side but that good things, possessions, portents come to us also from this direction.

It is not only that this is openly stated but the speaker is the Redeemer of mankind. He is addressing a gathering of his own disciples and is instructing them in the manner in which they should proceed. We may take it for granted that these verses have had for countless Christian souls not only a direct meaning but a symbolic one as well. Direction, in this instance, we feel sure was introduced with deliberate intent. A group of the disciples were gathered on the Sea of Tiberias. They had fished, "and that night they caught nothing."

ST. JOHN 21

4 But when morning was now come, Jesus stood on the shore: but the disciples knew not that it was Jesus.

5 Then Jesus saith unto them, Children have ye any meat? They answered him, No.

6 And he said unto them, *cast the net on the right side of the ship and ye shall find.* They

cast therefore, and now they were not able to draw it for the multitude of fishes.

There is one recital which is not common to the four gospels. The incident is mentioned in one of them only. Near the end of the Gospel of St. John and after the resurrected Christ had visited his apostles and bestowed upon them the Holy Ghost, one of the apostles is described thus:

ST. JOHN 20

24 But Thomas, one of the twelve, called Didymus, was not with them when Jesus came.
25 The other disciples therefore said unto him, We have seen the Lord. But he said unto them, Except I shall see in his hands the print of the nails, and put my finger into th eprint of the nails and thrust my hand into his side I will not believe.
26 And after eight days again his disciples were within, and Thomas with them, then came Jesus the doors being shut, and stood in the midst, and said, Peace be unto you.
27 Then saith he to Thomas, Reach hither thy finger and behold my hands; and reach hither thy hand and thrust it into my side: and be not faithless, but believing.
28 And Thomas answered and said unto him, My Lord and my God.
29 Jesus saith unto him, Thomas, because thou hast seen me thou hast believed; blessed are they that have not seen, and yet have believed.

Thomas again referred to by his other name, Didymus, which is the equivalent of twin in Greek, was with the group of apostles whom Jesus encountered on the Sea of Tiberias. It is no doubt from the spirit of skepticism which he showed that the ancient expression "doubting Thomas" has arisen. There is another element in the matter which has aroused our interest. If we accept the belief that half of all twins are left-handed it is apparent that there was an even chance of this being so in this instance.

Far beyond that, we feel that the vision which the narrative of St. John gives us of this one of the apostles, with its skepticism, its refusal to agree with a group, its evident pleasure in the matter of disagreement, is a complete picture of the mentality of individuals who are left-handed. To our minds this is the classical description of all time.

The scenes which took place on Calvary have also their intimations of literality dominance. These intimations are evident in some of the pictures which have been painted of the crucifixion. Christ was crucified between two thieves. The attitude of these two men towards the Redeemer varied greatly as is described in—

ST. LUKE 23

39 And one of the malefactors which were hanged railed on him saying, If thou be Christ, save thyself and us.
40 But the other answering rebuked him saying, Dost thou not fear God, seeing thou art in the same condemnation?
41 And we indeed justly; for we receive the full reward of our deeds: but this man hath done nothing amiss.
42 And he saith unto Jesus, Lord remember me when thou comest into thy kingdom.
43 And Jesus said unto him, Verily I say unto thee, Today shalt thou be with me in paradise.

We have been interested in studying *The Crucifixion*, by Antonella da Messina, painted during the 1400's. The picture teems with knowledge of dextral dominance. Mary, the mother of Christ, sits at the base of the cross on the right side thereof. St. John, the Baptist, the lesser figure of the two, is on the left of the cross. The body of the Savior is shown as at peace, relaxed in the quiet of death. So also is shown the body of the thief to the right of Christ. He appears to have found respite in his fate. The contorted body of the thief on the left of the Savior gives us full knowledge of the manner in which he met his end. It informs us also of what the artist had in mind when he planned these children of his brain. More important yet is the wound on the right side of the Redeemer. How this was received is told in—

ST. JOHN 19

34 But one of the soldiers with a spear pierced his side, and forthwith came there out blood and water.

The evident intent of the artist was to inform us that he who gave the death blow to the Savior of mankind was a left-handed man. It would have been impossible for a soldier wielding a spear in his right hand to have inflicted the wound portrayed in the painting. In *The Crucifixion*, George Bellows' masterpiece, painted in 1924, the wound on the right side of the Savior brings us the same message. It is hard to believe that the wound is so placed in compositions which were finished centuries past through simple coincidence. Finally, if such a word can be applied to the story of such events, it is obvious that the direction of Christ to St. Thomas that he place his hand in the wound in his Redeemer's side has a peculiar significance.

For, to a left-handed man, this was a deed easy and natural of accomplishment. To consummate it, all that was necessary was that the same action which produced the death wound be reproduced on a diminished scale. The hand which a sinistral would use for this demonstration if left to his own

devices, would be the same in regard to laterality as the original hand which thrust the spear. We believe that these conclusions are not only easily arrived at but logical as well.

To follow the action which led us to the belief that St. Peter, or Simon Peter as he is referred to in the narrative, was left-handed, it were best that we review the scene in the Garden of Gethsemane when the betrayal of Jesus took place. In order to contrive a complete recital of this event it is necessary that we compile a story made up of parts from all four of the gospels. Naturally enough, each narrator furnished posterity an account differing in many details from those presented by his fellow apostles. This was inevitable, as each had his own idea as to what was most important to transcribe in the limited space at his disposal.

It is startling to observe the likeness that strikes through the essence of them all. Certain facts of the meeting between the crowd which accompanied Judas to the Garden and the apostles are made plain by the wording. One is that the two groups faced each other. This is evident from several paragraphs. Judas had informed his confederates that he would betray Jesus with a kiss. Followed by his confederates Judas then sought Jesus out.

ST. MATTHEW 26

47 And while he yet spoke, lo, Judas, one of the twelve, came, and with him a great multiude with swords and staves, from the chief priests and elders of the people.

48 Now he that betrayed him gave them a sign, saying, Whomsoever I shall kiss, that same is he: hold him fast.

49 And forthwith he came to Jesus, and said, Hail master: and kissed him.

50 And Jesus said unto him, Friend, wherefor art thou come? Then came they and laid hands on Jesus, and took him.

In St. Mark the verbiage varies slightly, but the impression which we have found to invade each presentation is made evident by the actions of the betrayer.

ST. MARK 14

45 And as soon as he (Judas) was come, he goeth straightway to him and saith, Master, master; and kissed him.

The inference we have drawn, and it is of importance in the light of what is to follow, is that the gathering stood in two groups facing each other—the mob made up of those who came to see the betrayal of Jesus, armed with swords and staves, "a multitude" as it has been described, and the little group of the apostles gathered around Christ. It seems to us inevitable that these two congregations should have been face to face. This is made more evident by the description furnished in the Gospel according to St. Luke.

ST. LUKE 22

47 And while he yet spake, behold a multitude, and he that was called Judas, one of the twelve, went before them, and drew near unto Jesus to kiss him.

48 And Jesus said unto him, Judas, betrayest thou the Son of a man with a kiss?

49 When they which were about him saw what would follow, they said unto him, Lord shall we smite with the sword?

In the gospel according to St. John is found the clearest description of the movements of the two groups; not only of their mutual movements in the action which followed but of their original and subsequent locations in the scene. Judas, it is recorded, knew the ground well and the circumstance that the Savior often resorted thither with his disciples. To make the situation crystal clear for the purpose of our contention it is written that Judas organized his mob and saw that they were well provided with "lanterns, and torches, and weapons." In a word, they would perforce look toward their victims in the illumination which they carried in their hands. The narration proceeds.

ST. JOHN 18

4 Jesus therefore, knowing all things that should come upon him, went forth, and said unto them, Whom seek ye?

6 As soon as he said unto them, I am *he,* they went backward, and fell to the ground.

We believe it is evident from the foregoing that these two groups of people stood face-to-face. This brings us to the manner in which one of the apostles cut off the ear of one of the multitude. The act itself is described in the first two gospels only.

ST. MATTHEW 26

51 And, behold, one of them which were with Jesus stretched out his hand, and drew his sword, and struck a servant of the high priest, and smote off his ear.

ST. MARK 14

47 And one of them that stood by drew a sword, and smote a servant of the high priest and cut off his ear.

In the last two gospels the laterality which dominated the scene is disclosed. More than that in one of the Gospels (St. John) the name of the defender of Christ is mentioned and the name of the servant of the high priest also. It is, we have thought, a moving matter that this precision of description should have helped us after all these years in determining one of the physical characteristics of the first head of the church. In the light

(Continued on page 329)

Recent Advances in Endocrinology*

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RARE it is today for a person with illness of length not to be given either vitamins, x-rays, a blood transfusion or at least one endocrine derivative. It occurs to me that a survey of the present status of what is known about the endocrine glands, as functioning organs and as therapeutic agents, will be of general interest.

Pituitary Gland.—The etiology of diabetes insipidus has been more certainly established as failure in production of posterior pituitary lobe hormone following destruction of the gland or complete failure in the innervation of the secreting tissue. One group of dogs studied showed signs and symptoms of Simmonds' disease following infection of the hypothalamus. Thorne and Stein of Johns Hopkins added tannate to pitressin; and an intramuscular injection of the combination in oil every 24 to 48 hours was found to satisfactorily control polydypsia and polyuria in diabetes insipidus. Since it is known that diabetes insipidus is relieved when myxedema spontaneously occurs, thyroidectomy was carried out in three cases with relief in two. In the other case it was thought that not sufficient thyroid tissue had been removed. All three patients had Parkinson's disease, and the two who were relieved of their diabetes insipidus also experienced relief of symptoms of this condition.

Two Chicago workers report seven cases of shock following posterior pituitary injection, characterized by low blood pressure, and weak and rapid pulse. Anaphylaxis due to previous sensitization or coronary artery constriction with resulting myocardial anoxia, cardiac dilatation and decreased cardiac output are the possible explanations. The authors condemn the use of pituitrin for hemostasis during hysterectomy or other similar procedures.

Bruch of New York cites two cases of obesity in children aggravated by follutein treatment because of its detrimental psychological effect. The injection caused an allergic reaction and hence the child was coddled and fed more to compensate.

Nine children with Frölich's syndrome were treated by weight reduction alone. Spontaneous sex maturity occurred in all cases.

Thyroid.—Sevringhaus reports iodized salt, one part iodine to 10,000 parts salt, as adequate iodine intake for the growing child. American investigators in Cincinnati were able to cause a swelling of the thyroid by feeding humans substances filtered from goiter-producing water. The toxic substance does not pass the Berkefeld filter. This would suggest that a virus may be responsible.

Two cases are cited where Graves' disease seems to have been precipitated by self over-medication with thyroid in an effort to lose weight.

A New York writer has reported liver damage in thyrotoxicosis varying from simple acute fatty degeneration to atrophy and cirrhosis.

Exophthalmos is thought not to be the direct result of increased metabolic rate but due to one or more mechanisms of the pituitary and/or thyroid as they affect the extrinsic muscles of the eye. Exophthalmos was produced in guinea pigs by the injection of the thyrotropic factor of the anterior pituitary gland. Myopathy of the extraocular muscles was noted.

Ergotamine has been found helpful to control tachycardia during and for 72 hours after thyroidectomy. Rationale is not stated.

Gastrointestinal symptoms simulating peptic ulcer, chronic cholecystitis, or chronic appendicitis were observed in patients with average basal metabolic rates of minus 15 and an average cholesterol finding of 238. Experimental work showed that hypermotility of the stomach occurred simultaneously with clinical evidence of abdominal pain. Sixty per cent of 32 patients observed were relieved by thyroid therapy.

Parathyroid Glands. — Postmenopausal osteoporosis in women under 65 is due to a primary atrophy of the osteoblastic system resulting in a deficiency of the bone matrix. As this is not primarily a disease of calcium metabolism, calcium, phosphorus and serum phosphatase levels are normal. The spine and pelvis are areas most apt to be affected. Crushing of a vertebra and rupture of the nucleus pulposus are common. Estrogenic therapy increases callus formation in fractures occurring in these women.

Interesting observations on the use of dihydrotachysterol in the treatment of hypoparathyroidism are made by Holtz of Berlin. Oral administration is more satisfactory than parenteral. Fever, infection, unusual activity, or pregnancy call for increase in the dose. Anorexia, nausea, thirst, exhaustion and constipation are signs of overdosage.

*Read at a scientific meeting of the McGuire Clinic and St. Luke's Hospital, Richmond, Va., on April 21st, 1942.

These symptoms may be checked by administration of the follicular hormone. Large doses of dihydrotachysterol are useful in arresting hemophilic or thrombopenic hemorrhages. Vitamin D has shown properties almost identical with those of dihydrotachysterol. The dose is high—from 50,000 to 500,000 units daily.

Mammary Glands.—Although relief of breast pain followed administration of testosterone, estrone or stilbestrol to lactating women, little but a temporary effect on suppression of lactation was noted.

Gynecomastia is usually unilateral. It may be due to severe diverse conditions of endocrine origin but is usually due to increased estrogen production. Pathologically it is a hyperplasia of the mammary ducts and periductal connective tissue. A pseudogynecomastia is found in obese boys and results from localized fat deposits, rather than true glandular hyperplasia. Surgery for cosmetic reasons may be necessary in either type.

Pancreas.—Pituitary overactivity may cause diabetes by inducing an exhausted state of the islands of Langerhans. This has been clearly demonstrated in animals but this cause is uncommon in man.

Workers disagree on the effect of estrogens on diabetic patients. Berlin and South American workers claim success with these hormones in patients over 45; other workers report no significant antidiabetogenic action of estrogens. The rationale is that estrogens inhibit pituitary stimulation which has a diabetogenic effect on the pancreas.

The theory that "fat burns in the flame of the carbohydrate" has been altered. Today it is accepted that the liver is the sole site of acetone-body formation. Animal experimentation has shown that the utilization of acetone bodies by the peripheral muscles is not in any way affected by the availability of carbohydrate or of insulin. Yet insulin will alleviate the ketosis of the diabetic state or of starvation. This is done at the site of acetone-body formation in the liver. That is, dextrose and insulin are not ketolytic but are antiketogenic in their action, in that they prevent the formation of acetone bodies. The acetone bodies are not abnormal products of incomplete fat metabolism but normal end products of fat metabolism in the liver. A diminution of liver glycogen is the essential prerequisite for an increase in fatty acid oxidation resulting in accelerated acetone-body formation and subsequent acetonemia. It is postulated that fat oxidation and glycogen depletion in the liver compete for the same enzyme system. Thus when there is adequate glycogen, this enzyme, which seems to have a greater affinity for glycogen, is not available for fat oxidation, and hence the production of normally-produced acetone-bodies is inhibited. When glycogen is depleted the enzyme is utilized for excess fat oxidation with resulting increased acetone-body formation. This concept does not alter the rationale of treatment of diabetic acidosis, but seems to be evidence favoring the use of glucose as well as fluid in this therapy.

The effects of protamine insulin begin within a few hours after injection and extend over four days. Clear protamine and globulin insulin are being tried clinically but are not producing any very startling results.

Hyperinsulinism is receiving more and more attention. Three clinical features of diagnostic importance, known as Whipple's triad, have been found:

(1) Attacks of nervousness or gastrointestinal disturbance coming on after a fasting state.

(2) Blood sugar below 50 mgm. per cent.

(3) Prompt relief following ingestion of glucose.

The glucose-tolerance test is of little value and the tests of epinephrine effects on blood-sugar level are equally poor.

Adrenal Cortex.—The Waterhouse-Friedrichsen syndrome: Acute bilateral suprarenal hemorrhage occurring in adults as well as children is characterized by sudden onset with malaise, restlessness, then lethargy, coma and death in 16 to 24 hours. Fulminating septicemia is the usual etiological agent.

Functional insufficiency of the adrenal cortex in soldiers is reported from the German army. Breathlessness, vague cardiac symptoms, anorexia, weight loss, low blood pressure, low blood sugar and low metabolic rate were the chief symptoms and signs. Discharge from the army was the only solution offered.

It seems that desoxycorticosterone is only one of the three hormone factors of the adrenal cortex. It has to do with potassium-sodium balance, but has little or no effect on a pigment factor and a carbohydrate-regulating factor. Caution in the treatment of Addison's disease is urged, particularly because of danger of overloading the circulatory system. Excessive salt and water ingestion and over-restriction of potassium may cause dangerous increase in blood volume with pulmonary edema and cardiac failure.

The Ovaries.—Studies of estrogen and gonadotropin excretion of normal healthy women showed the presence of peaks of excretion usually about the mid-menstrual interval. However, there was no exact uniformity as to the time or amount of excretion even of the same woman during different menstrual cycles.

Pregnant mare's serum caused overdevelopment in some and degeneration of other ovarian follicles in monkeys. Ovarian dilation occurred regularly. The net result was thought to be injuries to the ovaries. There is evidence that Antruitrin-S and other chorionic gonadotropins have no gonadotropic effect in the female—may even be gonadotoxic. Ninety-one women subjected to laparotomies for various surgical indications, and previously given true anterior pituitary substance, equine serum, or anterior pituitary-like hormones, showed no evidence that ovulation could be attributed to these hormones. There was no synergy between any combination of hormones, and stilbestrol did not enhance the effect of any. Perifollicular congestion and hemorrhage were the only conspicuous effects produced by the chorionic gonadotropin. It does not induce follicle maturation or stimulate the development of follicles. There has been no carefully controlled work indicating any benefit from using gonadotropic or estrogenic hormones in the treatment of sterility.

Unit for unit, estradiol is three times as potent as estrogenic substance. Units, however, vary with different preparations and any of the true estrogenic substances relieve menopausal symptoms if the dose is adequate. The price is the practical factor in choice. New York workers have reported relieving symptoms for from six weeks to twenty-three months by implantation of crystals and pellets of estradiol. Other workers claim equally good results by the injection of an aqueous solution of the crystals, thus obviating the special technic of pellet implantation. Non-specific vaginitis is amenable to estrogenic substance by suppository. Its mode of action is said to be the induction of changes in the vaginal mucosa resulting in a change toward acidity thus opposing bacterial growth. Amniotin continues to be found very helpful locally and orally in the treatment of atrophic rhinitis.

Northwestern workers have found nausea and vomiting to be non-specific responses, which may be evoked by high doses of the natural as well as the artificial estrogens. Stilbestrol is not significantly toxic to the liver of women and there is little reason for withholding the drug from patients who do not experience undesirable side effects. These are nausea, vomiting, abdominal pain, anorexia, headache, vertigo, numbness and tingling. Interrupted treatment, 0.5 to 5 mgm. daily for two or three weeks of each month, is recommended. The minimal dose giving relief of symptoms is the best therapy.

Postmenopausal vaginitis was completely relieved by stilbestrol, but neither of 19 women treated for atrophic dermatitis was relieved. Uterine functional bleeding in young people and postmenopausal bleeding can be successfully checked with stilbestrol as well as by the natural estrogens. This is another evidence of the striking similarity between the two. It was feared that stilbestrol would be used as an abortifacient, but experimental work has shown that the pregnant woman tolerates large doses of stilbestrol and that during the first trimester of pregnancy it has practically no priming action for subsequent oxytocic products. Indeed stilbestrol alone is ineffective in inducing labor.

There seems less and less evidence that estrogenic substances, certainly within therapeutic limits, are carcinogenic.

In cases of functional uterine bleeding with hemoglobin below 40 per cent, Cornell workers are giving blood transfusions from pregnant donors. Testosterone is used for short periods, not more than a total of 250 mgms. Gonadotropins also have their place especially in younger women.

Testosterone therapy in women is not meeting with the approval that it did a year ago and many conservative clinicians decline to give androgens to women.

No work on progesterone this year has given results of any practical clinical significance. The new synthetic pregneninolone has proved of little clinical value and cannot be considered to have properties identical with progesterone.

The hormonal mechanism which induces labor is beginning to be recognized, but no clear-cut statements can yet be made.

The antuitrin-S skin test for pregnancy has not proven reliable; but the colostrum test of Falls and Cohen, using the colostrum from primiparous pregnant women, showed a 98 per cent accuracy in pregnant women, and a 96 per cent accuracy in non-pregnant. Males react like non-pregnant females, and children before puberty like pregnant females. The test may be inaccurate immediately after the menses. There is a weak reaction in the first six weeks of pregnancy.

The critical evaluation of progestin therapy for the treatment of threatened abortion does not offer encouragement clinically, or by reason of careful hormone excretion calculations.

Chorionic gonadotropic hormone (like antuitrin-S) in doses of 200 to 500 R.U., three times weekly, produced satisfactory results in causing descent of the testis in 30 per cent of 40 selected cases. Surgery was advised for the others.

Gonadotropins do not increase spermatogenesis, nor was sterility corrected in any one of the 14 patients studied by workers at the Cleveland Clinic.

Testosterone has been shown to have distinct effects on the muscular mass and strength, heat

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The First North Carolina State Hospital

Julian W. Ashby, M.D., Raleigh

PERHAPS the nearest approach to a modern miracle is the accomplishment of Dorothy Dix. A woman born in Maine and reared in Massachusetts came to North Carolina a dozen years before the outbreak of the War Between the States, when sectional feeling was at the boiling point, when New England, grown rich from commerce, a large part of it in slaves and, having sold her slaves to the South, was denouncing in the most scurrilous terms any and all who had anything to do with slavery; and induced the North Carolina General Assembly to vote a large sum of money for building and equipping a hospital for the care of the insane!

And she did the same kind of service for the insane and imprisoned of a number of other states, and for England.

"The most distinguished and useful woman America has yet produced" is a statement which was made by a President of the United States concerning Dorothea Dix. Miss Dix came to the State of North Carolina for the purpose of making a survey of the county homes and county jails to ascertain the number of insane persons who were being treated as paupers and criminals. She persuaded the Legislature to recognize the disgraceful inadequacy of the facilities for caring for these unfortunates and to do much in the way of improvement. It is to be remembered that Miss Dix made this survey when automobiles were unknown, railroads few and short, other roads unimproved and hotel accommodations terrible. After gathering the necessary information in regard to the mistreatment of the insane Miss Dix was fortunate in obtaining the assistance of Mr. J. C. Dobbin, who was an influential member of the Legislature when a bill was presented to the State Legislature in 1848 for an appropriation for the establishment of a hospital for the care of mental disorders. Without the assistance of Mr. Dobbin, this project would have been delayed, but with this assistance a bill authorizing the appropriation was passed by the Legislature, and after the passage of the bill Miss Dix was requested to select a site for erection of the hospital. She made choice of a handsome estate on the outskirts of the City of Raleigh, which was renamed in her honor Dix Hill, and upon Dix Hill was constructed the State Hospital, which was opened in 1856, with a census of ninety patients.

Mr. Dobbin was afterwards Secretary of the Navy, and the Hospital Board of Directors have honored themselves by naming the building on Dix Hill used for infirm and elderly patients Dobbin Infirmary. It has a capacity of one hundred and seven, with a population of one hundred and thirty patients.

At the present time the patient population of the hospital is approximately twenty-five hundred.

It is interesting to note that in the construction of the main building of the hospital the advanced step of counter-ceiling the floors was taken into consideration in order to make each story as fireproof as possible, and also sound proof.

Miss Dix did not confine her efforts to any one State, nor even to her own country. She was instrumental in obtaining better facilities for the insane in Scotland. Death overtook her in the State Hospital at Trenton, New Jersey, which was a hospital in which she had also been interested. The history of Miss Dix should be known to every school child, as her name will always stand for advancement and humane interest.

A few years ago, during the W.P.A. regime, many of the buildings were safeguarded by being fireproofed. This project was financed equally by the United States Government and the State of North Carolina. The considerable outlay was well justified, as many buildings in which individuals had been confined had been recognized as fire hazards, and the same was true of many of the departments in this institution. It might be recalled that the Men's Department of the Main Building was destroyed by fire fifteen years ago and the same fate might have befallen the other departments. Fortunately this did not occur and now the fireproofing will largely obviate this difficulty. During the fireproofing project it was almost impossible to admit additional patients to the institution; indeed, it was difficult to take care of the patients who were already under care. When the work was completed it was found that the hospital had increased its facilities by only a hundred and sixty-six beds. The additions consisted of a building for women, with a capacity of sixty-six, which now has a population of eighty-one; a building for tuberculous insane patients, with a capacity of thirty men and thirty women, the old frame buildings used for this purpose being torn down; and a building for male attendants who had

been quartered in the Male Department of the hospital. The increase in accommodations was soon taken up by the accumulation of patients who could not be admitted during the construction period.

The purpose of this hospital is the care and treatment of mental disorders. The hospital admits patients with mental diseases from the fifty eastern counties of the State; and the epileptic patients, the criminal insane and the inebriates from the entire State.

There have been great advances in the understanding of mental disorders since the opening of the institution, and the methods of the hospital have kept step with these advances as far as possible with facilities provided. It is recognized that the strength of the hospital depends upon the strength of its organization, and every effort is made to strengthen this organization by keeping up interest and endeavoring to keep in touch with advanced thought along psychiatric lines. Every patient admitted to the institution has a thorough physical and mental examination; laboratory determinations of amount of sugar, urea and bromide in the blood; urinalysis, routine blood cell counts; and a Wassermann test of the blood is made by the State Laboratory. The Dorothea Dix School of Nursing, incorporated in 1933, adds to the strength and usefulness of the organization. The School was organized in 1913, but it was not given its distinctive name until twenty years later.

The hospital employs two clinical technicians who perform most of the laboratory examinations. Professional care of the patients is directly at the hands of a corps of physicians. We have an allocation allowing us eight physicians, but unfortunately we are unable to always have a complete staff. The physicians on duty carry a heavy responsibility, especially on the week ends when half of the physicians are off duty for essential recreation.

There are sixteen registered nurses in charge of different departments of the hospital as supervisors, and we should employ at least twenty graduate nurses. The attendants and pupil nurses have sustained contact with the patients, giving them close supervision to the full extent possible in the circumstances; but at times we do not have a sufficient number of such employees to safeguard and supervise the patients as we would like to do. The fact that we are overcrowded in every department adds to the difficulties of giving care, and has necessitated in recent years the use in some cases of the straight-jacket. This hospital has always felt, as the late Dr. William A. White expressed it, that mechanical restraint is as harmful as chemical restraint; but with the overcrowded conditions which exist on many wards, and especially the wards used for disturbed patients, the straight-jacket must be used in a limited way in order to prevent homicide and suicide. It is never used as punishment, but in a building with a capacity of one hundred and a population of one hundred and twenty-five disturbed patients, it would be impossible to prevent injuries without the safeguard of the straight-jacket. If the stage is ever reached in the hospital facilities when the buildings are never overcrowded, it is quite likely that the straight-jacket can be practically abandoned.

In 1940 we arranged for the examination of all patients and employees for tuberculosis by the State Sanatorium. Dr. Easom was sent to the hospital with his associates for this survey. We feel that this was one of the most progressive steps which we have made in the institution in many years. This examination consists of a skin inoculation and a fluoroscopic examination, to be supplemented by x-ray film examinations when indicated. The Board of Directors of the Hospital readily agreed that the small expense was amply justified.

We have also arranged in recent years to allow certain patients to leave the hospital on visits. Each such patient is carried on our books as visiting in the care of his or her family, it being understood that if the visit is extended for a longer period than two weeks, the patient would be probated, with the thought in mind that the patient has made a satisfactory adjustment at home. This short visit at home, even though the patient may have to be returned to the institution within the two-weeks period, has added a great deal towards keeping up the family ties.

All accidents which occur in the hospital are reported to the Executive Committee at its meeting each month. Whenever possible, following such injuries or accidents, relatives of the patients are always notified.

There are three recognized causes for dismissal from the service of the hospital. They are striking a patient, appropriating clothes belonging to a patient, or the hospital, and indulging in alcoholic beverages.

The hospital has for the amusement and entertainment of the patients, a baseball park, and moving picture shows and dances each week; and Chapel is held each Sunday morning at 8:30 by some eminent minister of Raleigh. The ministers hold this service in rotation, so that we can have the advantages of different ministers and from different denominations.

Many of the patients are employed in useful occupational therapy—the men working on the farm, the women in the sewing room and art

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Heart Disease Clinic*

Hugh Smith, M.D., Greenville, South Carolina

YOU HAVE heard so much about coronary occlusion and seen so many cases of your own that there is very little that I could show you that would add much to that. However, I have under observation two cases of the congenital group. They are both interesting enough to merit a little of your time to see them and to hear these hearts. They are both here and we have films, cardiograms and some information about them both. I am going to say a few things about the two cases presented and we will have them both ready with stethoscopes and cardiograms if Dr. Brenizer and the Society would like to see them. One of them is a young lady and she will be in Room 220 across the lobby. Dr. Holmes has taken her over and made her fairly comfortable for your inspection and observation. I am just going to show you two conditions.

In congenital heart lesions, the auricular type is more common. The second most common is ventricular septal defects. The third is patent ductus arteriosus. The fourth is coarctation of the aorta. One of the cases I have to show you is interventricular septal defect and the other is coarctation of aorta.

In Abbott's review of heart lesions, she reports 37.3% auricular septal defects; 27.4% ventricular septal defects; 24.2% patent ductus arteriosus; 10.5% adult type of coarctation of the aorta and 3.7% infantile type of coarctation of the aorta.

The maximum age limit in the review—one is 70, another 79, another 66 and one case up to 92.

A few things about interventricular septal defects I would like to say to refresh your memories. Interventricular septal defect is the second most common of the congenital lesions. It is generally associated with other defects and almost all are found at the base of the heart just below the aortic valves in the fibrous area that is considered the undefended area. In Abbott's series 257 were basal and only 17 elsewhere; 207 cases were complicated by other defects; the sexes about equally. Interventricular septal defects are usually oval or circular and one to two centimeters in diameter. Ordinarily there are no symptoms unless complicated.

The signs of interventricular septal defects are:

1. Loud, blowing murmur best heard left of mid-sternum and not widely transmitted. If the murmur is very loud some thrill is usually palpable.
2. Cardiac enlargement variable.
3. Electrocardiogram is generally normal unless there is interference of bundle of His with resulting heart block. You do get varying degrees of heart block. This chap this afternoon has two-to-one block. He has a steady ventricular rate of 40. He has no symptoms of heart disease. He was in the National Guard last year for a few months. They examined him for admission to the Army and nothing was found. He stayed three or four months and was to be inducted into the regular Army. When he came up they found the finding he now has and he was sent home.
4. Cyanosis is rare except in terminal state when right ventricle pressure exceeds the left.

This was called Rogers' disease in 1879 in one of the French journals.

The other case is coarctation of the aorta. It is seen in all degrees from slight to high, which is fortunately rare. It occurs at or near the insertion of ductus arteriosus which may remain patent.

The two main types are:

1. Infantile, which consists of narrowing of the whole isthmus—the part between left subclavian and ductus arteriosus. In fetal life this part is hypoplastic and inactive. If this hypoplasia persists, the ductus arteriosus must take care of all the lower body. Obviously it is a very serious type. They constitute only 3.7% of the total, and then usually complicated with other defects.
2. The adult type. A lot of these persons live to be elderly. The young lady we are going to show you this afternoon is 35. The adult type shows generally a sharply localized constriction of the aorta at or near the insertion of the ductus arteriosus. It is probably always a prenatal condition. In only a few cases does the ductus remain patent. If of extreme degree, other congenital anomalies are frequent. All grades of constriction occur. It is three-to-one more common in males than females. I know no reason for that. The result is a circulation of great interest. Great dilatation of the aorta proximal to the constriction, even to aneurysm with narrowing of aorta distal. Collateral circulation through widely dilated mammary, scapular and intercostal arteries. The heart enlarges from resulting mechanical hypertension and load. Acquired valvular disease is not unusual.

The signs of coarctation are these:

*Presented to the 44th Annual Meeting of the Tri State Medical Association of the Carolinas and Virginia, held at Greenville, S. C., February 23rd-24th.

1. Inequality of blood pressure and pulse volume between upper and lower extremities—brachial blood pressure to 200; femoral blood pressure to 100.
2. Evidences of collateral compensatory circulation, palpable intercostal and scapular pulses.
3. Long systolic murmur heard over heart and back and over above vessels.
4. Decrease or absence of aortic knob shadow.
5. Notching of ribs by dilated tortuous intercostals.
6. Enlargement of heart and proximal aorta.

The prognosis depends upon the individual and on the degree of involvement.

The cases usually come to this sort of end picture and the age at which it occurs is very varied:

1. Heart failure, which is most common.
2. Rupture of aorta.
3. Cerebral hemorrhage.
4. Superimposed bacterial endocarditis, the least common.

LATERALITY DOMINANCE IN THE FOUR GOSPELS

(From page 322)

of all the unfortunate happenings which the human race is given to associating with the gift of sinistrality, it is, we think, of no small moment to discover that Peter the Rock, he whom the Redeemer selected from all his apostles to carry on his work, should have been left-handed.

When we bear this in mind the story of the denials of his master, and that "the cock crew", take on a greater significance. So also do his subsequent life of passionate devotion to his charge and his final martyrdom. We have searched in vain for evidence that Judas Iscariot was left-handed. We have been unable to find a shred of evidence that would support this view. That we should stumble upon the description that we did surprised and, at the time, shocked us. We suffered, we fear, from some of the popular ideas in regard to sinistrality.

ST. LUKE 22

50 And one of them smote the servant of the high priest, and *cut off his right ear.*

ST. JOHN 18

10 Then Simon Peter having a sword drew it, and smote the high priest's servant, *and cut off his right ear.* The servant's name was Malchus.

It seems inescapable that those concerned in this deed of violence must have been facing each other. All the descriptions of their position bear this out. To cut off the right ear of a man so placed would have been impossible if the sword had been swung in the right hand of the attacker. With the sword placed in the sinistral hand the action would have been smooth and without hindrance of malposition. That this was what took place all the evidence at hand supports. The first head of the church which Christ brought into being on the earth then must have been a left-handed man, which, as we have said, many of his personality atributes described in the New Testament further suggest.

RECENT ADVANCES IN ENDOCRINOLOGY

(From page 325)

production, skin and circulatory status, and the psychic condition of men with deficiency of testis function. There is no sound basis for the treatment of impotence by testosterone unless testicular disease is demonstrable. Turell of New York reports successful treatment of ano-genital pruritus by injection of testosterone proprionate. There seems to be a definite relationship between acne and the male sex hormone in acne-susceptible patients. While testosterone proprionate has been used with benefit in some cases; i.e., to depress the natural male hormone, its general use is deprecated because of potential dangers. Successful implantation of pellets of methyl testosterone has been reported in the treatment of eunuchs.

Blalock of Johns Hopkins has shown encouraging results of thymectomy in the treatment of myasthenia gravis. More work must be done before conclusions are justified. There is increasingly less evidence that the thymus is responsible for rapid growth and maturation.

Reference

The basis of this report is the *1941 Year Book of Neurology, Psychiatry & Endocrinology,* the Year Book Publishers, Chicago.

THE FIRST NORTH CAROLINA STATE HOSPITAL

(From page 327)

room, and assisting in general household duties. It is recognized that occupational therapy is advantageous, as nothing is so stimulating to an individual as to feel that he is usefully employed.

The affairs of the hospital are under the Board of Directors, and the Executive Committee of the Board of Directors is composed of Senator W. G. Clark, Chairman; Col. N. E. Edgerton, Vice-Chairman; and Senator C. Wayland Spruill, Secretary.

Cyanosis of Newborn.—Data collected from 1000 consecutive deliveries show cyanosis of some degree in 284 infants. Resuscitation was required in 56 of these. Labor beyond 24 hours is a cause. Prematurity of birth was found to be the most significant single cause of anoxia or apnea neonatorum.—*Moss,* of Minneapolis.

DEPARTMENTS

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

POETS AND PSYCHIATRISTS

I KNOW I am innately lazy. Yet I am seldom idle. But I am constantly driven into activity by the grim and unrelenting urge of necessity. Were it possible for me to make use of my energy for many weeks just as I would, I should devote it to a consideration—not a study—of poetry. Were I to determine to make a study of poetry that would rob the indulgence of all pleasure. Much of the world's most splendid literature has been made horribly and forever distasteful even to many intelligent adults by their having had to study it under compulsion in their youth. Recently I heard a minister speak of the pleasure he experienced in his childhood in reading The Pilgrim's Progress. And I wondered, of course, if he were telling the truth. Had I said what he said I should have told a story.

The pluralization of the author by the use of the so-called editorial we is highly distasteful to me. And the author's reference to himself as the writer should cause him to be turned over instantly to the Gestapo. Why should one resort to the utilization of such verbal mechanization in a proffer of apology for what one is writing, or in an effort to minimize even a little one's egotism in presuming to set forth in written words somewhat of what one feels or thinks, either or both? I cannot conceive of a mortal's doing anything more egotistical than living. One's physical structure is constantly proclaiming to one's fellow-mortals one's presence, and the proclamation is not always soundless. Some individuals are congenitally noisy. They emanate or radiate sound, often of such a quality and volume that it is always noise—and noise may be, I suppose, sound tinged with an unpleasant note.

If one does not apologize for being alive, and if one does not restrain one's self from proclaiming one's self to one's fellows through vocal speech, why should one apologize to self or to another for attempting self-expression in written language? I do not know. It is easy to prevent the impingements from the written words upon the retinae; but it is difficult, indeed, to devise ear-lids that coapt so perfectly as to exclude from the ear-canals all atmospheric vibrations. And never before, since our ancestors crawled to high land from the marine mud, have man's tympanic membranes been so busily engaged in keeping time with the din in which modern man has his being. Will not the veterans who survive the great battles of to-day continue to hear in memory the dreadful detonations as long as they live, whether their ear-drums have been destroyed or remain intact?

Living and expression of self not only coexist, but they may constitute the same thing. The honeysuckle, now fully abloom, speaks to our eyes and even more pleasantly to our nostrils. No other language known to me is so delightfully informing. What a mistake we make in assuming that all language must be either spoken or written! Because life is filled with love and beauty and sorrow and joy and hope and despair and enthusiasm and courage there must be poets to interpret the world to us and ourselves to ourselves.

I spent most of the first half of May in Boston in attendance first upon the annual meeting of the American Association of Mental Deficiency and immediately afterwards in attending the American Psychiatric Association. Could I have remained in Boston another week it might have been possible for me as guest to be at the annual session of the State Medical Society of Massachusetts—its 166th, I believe. That must be one of our oldest medical organizations.

Not many know that those who devote their lives to the study of mental subnormality and to the care of those so deprived have had a national medical organization for almost seventy years. The American Psychiatric Association is our oldest, national medical body. In 1944 the Centenary will be held in Philadelphia where the thirteen founding-fathers brought it into being in 1844.

My situation was such that it was not possible for me to hear many of the papers presented at the meeting of the American Psychiatric Association and the discussion provoked by them. No one was able to understand why the meeting was more largely attended—by 150—than any other meeting in the Association's history. Many members are in the service and were absent from the meeting on that account. Many superintendents of state hospitals were kept at home by the shortage of help in their hospitals. But the meeting in Boston was splendid—in numbers, in the quality of the program and in spirit.

I had been called upon to arrange the program of the National Association of Private Psychiatric Hospitals. On that program were three psychiatrists. But one of them was kept away by sickness, and Dr. Karl Menninger had to respond at the critical moment to be elsewhere. The two poets who had unhesitatingly accepted invitations to speak to us turned out to be our main dependences. Dr. Merrill Moore, about whom I have heretofore spoken, is one of the remarkable men of the time. His father was Librarian of Tennessee, and his widowed mother is his father's successor. Last fall I made a visit with Dr. Merrill Moore to his mother's office in the State Capitol. All the way up from

the first step into the building to the Library, and all the way down again, Merrill Moore held happy reunions with black and white, women and men, high and low, in the State's employ—scrub women, janitors, elevator boys, lawyers, judges, stenographers, legislators, the Governor, and dozens and scores, perhaps, of various other people. They and he knew each other on sight, and apparently much about each other. In his mother's office he was obviously a member of the family. Such relationships tend to make life sweet in the South. Perhaps it may be so elsewhere, even in Boston, where Dr. Merrill Moore is busy in the practice and in the teaching of psychiatry, and in living the life of a poet—undoubtedly the world's chief Sonneteer. Merrill Moore, in presenting to us another poet, recited two or three of his sonnets. I shall not forget what he said about the sound time makes in passing. We used to say, in childhood, that the sound we could hear when a sea shell was held against an ear was the moaning of the sea. Merrill Moore attributes the sound to the passing of time.

Robert Peter Tristram Coffin is Pierce Professor of English in Bowdoin College at Brunswick, Maine. I doubted, when I asked Professor Coffin to speak to us, if he could or if he would come. He is a busy man, and I had no feeling of certainty that he would care to associate even for a brief period with doctors who are interested chiefly in the mentally unsound. Professor Coffin was graciousness itself.

I am certain that those of us who had the good fortune to hear him will never again think of life in the same way. He recited to us a number of his poems, and he gave us an account of the circumstances which seemed to evoke the poem and later, perhaps years and years later, to cause him to write it. He caused us to feel that the poem often wrote itself; as if he were the intervening, sensitive agency betwixt the causative event and the receiving page.

He told us what poetry means to him. He defined poetry as the very best one can say about life. And this best has respect for words, for rhyme, for metre, for assonance and for alliteration. And poetry is the art of making people feel well about life. He writes most of his poems late at night, between midnight and two or three o'clock, after all honest people are abed and asleep. No mortal, unless he were innately depraved, could be either cynical or dishonest at such a holy hour, when the universe is wholly in the keeping of darkness and of God. All mortals are somewhat poetical. A chief factor of poetry is memory, for memory reshapes the haphazard, often meaningless, events of life, into a pattern and a purpose, and makes the past live gloriously forever. Water from a spring on the mountain top is the best water. Poetry is like such water. Poetry is the best arrangement of the finest thoughts. The sorrows in poetry, and they are many, are never wasted, because they are directed to a high purpose.

Somewhere Shakespeare says that poets, lunatics and lovers are of a mind compact. I quote inaccurately from memory and not from the text. But the great dramatist, the greatest of all psychologists and psychiatrists, is telling us that poets, lunatics and lovers experience feelings and evolve ideas that other mortals do not have, and, on that account, they are thought to be mad. I have no doubt that poets, such as Shakespeare, Merrill Moore, Robert P. T. Coffin and many another, could, by association with a so-called lunatic, find out that the psychotic individual might be living in much more intimate association with life's great truths than those of us who merely apply names to the mad man's condition. And the mentally sick person is tragically in need of being understood, by himself, by his family, by the physician, and by the law. The poet probably understands the so-called mad man—so many of them are thought to have been mad.

And while Merrill Moore and Professor Coffin were moving us as we had never been moved before in our lives, a great group of psychiatrists were being transported clear out of Boston and into another world by Howard Hanson, Dean of the Eastman School of Music in the University of Rochester. He talked about the musician's point of view toward emotional expression. A high official of the Psychiatric Association told me that Dr. Hanson's address was the most moving presentation he had ever witnessed at a medical meeting. And Dr. Harry C. Solomon, one of Boston's chief psychiatrists, almost complained to me that Professor Coffin had so shaken him that he would never be the same man again!

How eager we were to learn psychiatry from a musician and from poets! And yet there are those who condemn us because we neither know nor try to know about the human mind—our own minds or the minds of others! Away with them!

ABOUT YELLOW FEVER—THE NEW KIND AND THE OLD

(*Rockefeller Foundation Review* for 1941)

The distribution of yellow fever vaccine manufactured by the Foundation in New York in 1941 to the U. S. Army, Navy and P. H. S., and to the Panama Canal Zone and Virgin Islands was 1,938,300 doses; to Africa, India, Brazil and Singapore, 2,320,000 doses.

The United States Army and Navy have asked the Foundation to supply several million doses during 1942.

Research work in yellow fever was continued during the year in Brazil and Colombia in South America and Uganda in Africa, and assistance in control activities was given in Boliva, Peru and British Guiana. For the fourth consecutive year no aegypti-transmitted yellow fever was recorded anywhere on the American continents, but out-

breaks of jungle yellow fever during 1941 in Colombia, in Venezuela and in the Amazon Valley in Peru, Bolivia and in Brazil, emphasize the ever-present threat of reinfection of aegypti-infested areas .

Continued inestigation of jungle yellow fever in Colombia brought added evidence that, in certain areas at least, a *Haemagogus* mosquito is the chief villain. One of the puzzling aspects of this problem has been the complete disappearance of this mosquito at certain periods, especially during the dry season, while at the same time the disease has continued among both animals and men. This problem was resolved by the discovery that *Haemagogus* is an inhabitant of the tree tops.

Yellow fever virus was isolated from one of two observed human cases and also from two wild-caught lots of a prevalent mosquito, *Aedes simpsoni*. The mystery of the jungle yellow fever of Central Africa, in regions in which the aegypti mosquito is scarce, seems to be on the way to solution.

In the last number of this *Review* it was reported that no evidence of the presence of the *Anopheles gambia* mosquito was discovered in Brazil during the final 47 days of 1940. This mosquito imported from Africa by airplanes or fast navy destroyers, as a malaria vector is more efficient than any anopheline indigenous to America, and its further spread was generally feared. Over 12,000 square miles of northeastern Brazil became involved; more than $2,000,000 was spent and an army of over 2,000 trained workers was mobilized, under the leadership of Dr. Fred L. Soper of The Rockefeller Foundation, to attack the invaders.

No such infested areas were discovered during the year 1941!

Commercial planes are now carefully fumigated after they leave Africa and again before their passengers are discharged in Brazil. A dead female gambiae was discovered after fumigation in a plane arriving in Brazil in October 1941, and two more in January 1942. The original infestation, with all its miseries, could readily have been started by a single fertilized female.

An infected yellow fever mosquito needs only to be introduced into India to start a conflagration of what might be of appalling proportions . We do not know whether or not the tsetse fly, one of the vectors of African sleeping sickness, can successfully establish itself in the Americas. A male of this species was found on a plane going to Brazil from Africa in November 1941. Many types of disease-bearing insects, not yet universally distributed, could take advantage of the airplane to infect plants, animals and men in regions far removed from their original habitat.

"In its tragic relationship to mankind," said Hans Zinsser, "the disease of typhus is second to none—not even to plague or to cholera." In most major wars more persons have succumbed to typhus than have fallen on the battlefield; and Zinsser speaks of "the relative unimportance of generals." Typhus is now active in southern Spain, in Poland, Rumania and the neighboring countries, whence it may be expected to spread in disastrous epidemics.

STILBESTROL

(L. W. Mason, Denver, in *Rocky Mountain Med. J.*, April)

The majority of these patients were menopausal (natural, surgical, irradiation), and in the remainder it was used for other conditions in which the natural estrogens would be indicated.

Stilbestrol is as effective, unit for unit, by mouth as intramuscularly, whereas in case of the natural estrogens the ratio is about 1 to 10; and *stilbestrol is cheap.*

In certain cases it produces nausea, even vomiting; rarely there is epigastric pain. These symptoms disappear Mar. on continued use, or reduction of dose. Rarely its effect is inferior to that obtained with the natural estrogens.

Begin 1 mg. daily until symptoms are relieved, after which the intervals between doses can be increased or the amount reduced as advisable.

DENTISTRY

J. H. Guion, D.D.S., *Editor,* Charlotte, N. C.

RELATION OF TEETH TO INFLAMMATION OF THE EYES

Every now and then a patient is seen whose eyes are being injured by disease conditions originating in his teeth. In some such cases dental treatment saves the sight.

The article abstracted here[1] appears to state the case with fairness.

The first reference to the association of ocular and dental disease was made somewhere around 2000 B. C. by Hammurabi in his *Table on Diseases.* It was not until the latter part of the 18th century that mention was made again in literature of their connection.

It was only after the advent of the röntgen ray as a means of diagnosis that progress was made in this respect. In searching for foci of infection affecting the eye, teeth are usually given first consideration today. An apparently normal tooth, as to external appearances, may produce diseases of the eye. The röntgenogram may disclose pulpless teeth with chronic periapical infection, pyorrhea alveolaris with pockets surrounding partially erupted teeth and chronic pulp infection in vital teeth, impacted teeth and septic broken roots, pulp stones, degenerated pulp and alveolar infection remaining following extraction. We may have eye disease with dental pathology not as a sole but as a contributory cause.

Articles on ocular diseases caused by dental infection appeared as far back as 1839.

In man it must be assumed that these bacteria were present in the mouth for years, the iris thus being subject to their influence over a long period of stimulation; virulence and ability to invade tissues will vary with generalized or lowered local resistance of the host, severe or repeated injuries.

Extraction of the infected teeth in some instances with curettage of the alveolar socket from remnants of septic material resulted in steady improvement in the eye. The reason why no improvement has seemed to follow the removal of a septic tooth or a number of such teeth in some instances may have been that there was the leaving in place of some discased tissue. Several cases of iritis in which no improvement after dental extrac-

1. Grant Balding, M.D., Boise Idaho, in *Northwest. Med.*,

tition occurred disappeared on curettage of the alvelor sockets containing such areas.

The ocular diseases which result from dental lesions are of two groups: 1) reflex neuroses presenting as sensory, vasomotor or muscular disorders; 2) inflammations of eye tissues due to infection. The former are most always due to irritation of a vital pulp tooth, rarely due to an impacted tooth; the latter practically always due to an infection of the peridental membrane in the form of alveolar abscess at the apex of the root or a pus pocket alongside the root. Here amblyopia may occur without visible fundus changes, external eye muscle paralyses, blepharospasm, mydriasis, neuralgia or disturbance of color vision.

Eye symptoms of toxic or infective nature may result from two distinct pathologic processes which involve the peridental membrane: 1) alveolar abscess is always subsequent to death of the pulp and necessarily involves the tissue about the apex of the root; 2) chronic suppurative pericementitis, pyorrhea. An abscess usually discharges through the gum, or it may remain as a blind abscess.

Organic lesions of the eye tissues occur as: 1) metastatic bacterial invasion, 2) toxemia resulting from disintegration of the microörganisms or of their capsules through the blood stream, 3) direct extension from the infected teeth to the orbit, 4) direct transferrence from the mouth to the eye, usually by the fingers, 5) infection through the intestinal tract from material swallowed, 6) extension of the virus along the nerves from the first to the second branch of the trigeminal (as in the case of herpes of the cornea), 7) local manifestation of an allergic reaction, and 8) transmission along the lymphatics.

Infections of the peridental membrane occupy a peculiar place in pathology because of the unusual makeup of the titssue. The dentin which forms the bulk of the root of the tooth is covered with a layer of cementum, which corresponds in many respects to bone. The periosteum which lines the socket and the cementum covering the root are connected by many bundles of fibres of the peridental membrane. Lying on the surface of the cementum between the ends of these fibres is a layer of cementoblasts, which correspond to the osteoblasts of the periosteum.

The cementum does not have a blood supply corresponding to that in bone, nor does it have Haversian systems. If periosteum is stripped from bone and the bone becomes necrosed, activity of the cells within the bone will separate the necrosed area and exfoliate it. When the peridental membrane is stripped from the cementum by suppuration, the cementum becomes a dead tissue which cannot be exfoliated except in its entirety by removal of the tooth. It is sufficiently porous to become saturated with the products of suppuration, and remains as a constant irritant to overlying tissue.

Fibers of the membrane and the alveolar process corresponding to the area of detachment are absorbed. A lesion is established which cannot heal.

Alveolar bone is practically never laid bare, but is covered by the soft tissue membrane which presents a granulating surface to the root, an excellent opportunity for infective agents to enter the circulation.

Ocular muscles are just as sensitive to lowered vitality as muscles of the arms and legs. The asthenopias may be thus explained: 1) lids: ptosis, inflammation, edema, chemosis, gland infection; 2) lacrimal apparatus: dacryocystitis; 3) conjunctiva: infection, edema; 4) cornea: phlyctenular and herpetiform keratitis; 5) sclera: scleritis—transient, superficial, deep; 6) uveal tract: iritis, cyclitis, choroiditis—focal or diffuse; 7) lens: perinuclear and toxic opacities; 8) retinal vessels: embolism, thrombosis, hemorrhages; 9) retina and optic nerve: retinitis, papillitis, papilledema; 10) glaucoma: precipitation of acute attack, and aggravation of preëxisting—simple and inflammatory; 11) ocular muscles: impaired motility, paresis; 12) globe: endophthalmitis, panophthalmitis; 13) orbit: abscess with exophthalmus, orbital vein and secondary sinus thrombosis.

CARDIOLOGY

C. M. Gilmore, M.D., *Editor*, Greensboro, N. C.

CARDIAC EMERGENCIES AND THEIR MANAGEMENT

The order of frequency of cardiac emergencies in the home, according to Evans:[1] 1) acute pulmonary edema, 2) coronary infarction, 3) paroxysmal tachycardia, 4) nocturnal dyspnea of left ventricular failure, 5) heart block, and 6) carotid sinus syndrome.

This astute bedside doctor goes on to write an informative article on this important subject.

Most attacks of acute pulmonary edema are due to left ventricular failure of the hypertensive heart. More rarely it is due to coronary failure, the diagnosis of which can be suspected from the history and a more profound drop in blood pressure, to be confirmed later by electrocardiogram.

The emergency treatment in the two conditions is the same. Place the patient in an upright position, usually he has assumed it. Tie a tourniquet about each of the four limbs, not tightly enough

1. J. A. Evans, Boston, in *Wisc. Med. Jl.*, April.

to obliterate the pulses, to produce the effect of a temporary phlebotomy. When the patient has recovered, remove the tourniquets one at a time, allowing a judicious time interval after each removal; give an injection of ¼ grain morphine plus *1/100 to 1/50 grain of atropine.*

The quick drawing of 500 c.c. of blood is to be done if recovery does not take place promptly. In the hospital inhalation of oxygen and helium is in order. I have used a metabolism machine, with a small weight on top of the bell, for carrying out this treatment. In the home, I have called in the fire department with its pulmotor apparatus. Sucrose, 200 to 300 c.c. of a 50-per cent solution given intravenously, and 3 ounces of concentrated magnesium sulfate solution per rectum, to be retained as long as possible, may help dehydrate the lung.

In the case of *coronary infarction,* the physician is called to stop pain. I have not seen failure from the *intravenous injection* of ¼ grain of morphine sulfate dissolved in 10 c.c. of 25% magnesium sulfate supplied in ampule. Lately I have been using papaverine intravenously in ½ grain ampules (Lilly) to dilate spastic arteries which in cases of infarction are apt to exist throughout the whole coronary bed. I have gone into a garage, borrowed an oxygen tank with reducing valve, prepared a bubbling bottle at the local drug store, heating the glass tubes over the druggist's Bunsen burner; borrowed rubber tubing from an enema bag; used a small urethral catheter for the nasal catheter, and given oxygen intranasally as effectively as by an expensive outfit. If dyspnea and cyanosis are present in any cardiac emergency, you cannot hurt your patient with oxygen. Get it to him if you possibly can. Apply warmth. Coramine is of little avail.

Of the arrhythmias of the emergency period of a coronary infarct the most common is paroxysmal ventricular tachycardia with its danger of passing into ventricular fibrillation. Quinidine has been advocated to stop this grave disorder. Auricular fibrillation is the next most common arrhythmia after infarction. Unless the circulation has been embarrassed, let it go untreated rather than insult an injured myocardium with a myocardial toxin. If congestive failure sets in give digitalis—carefully, and not in a massive dose. Take a week to digitalize the patient. Complete heart block after infarction, leave alone until the infarct has healed, when it may disappear. The use of aminophylline is to be condemned in the emergency stage of infarction. What the injured myocardium needs most are glycogen and oxygen. The glycopen may be built up by giving 50% glucose intravenously, 100 c.c. two to three times daily. Extrasystoles and dropped beats due to partial heart block after infarction are of no concern and will disappear with improvement of myocardial nutrition.

A regular rate of 180 to 200 suggests the diagnosis of *paroxysmal auricular tachycardia.*

Auricular tachycardia cannot be told from *ventricular* tachycardia except by electrocardiogram, but neurotic background always suggests the less serious auricular variety. A slower regular pulse of 160 suggests auricular flutter with a 2:1 block. Vagus pressure over the carotid sheath, vagus stimulation by pressure on the eyeball, gagging, or assuming the knee-chest position may stop auricular or ventricular tachycardia but will only slow auricular flutter. Mecholyl, 0.025 Gm. intramuscularly, should be tried next. Quinidine will usually stop a persistent paroxysmal tachycardia, auricular or ventricular. Give 0.2 Gm. every hour for five doses unless the pulse slows sooner. If unsuccessful after a wait of four to six hours, give a double dose. Several times 0.2 Gm. of quinidine dissolved by heating in 25 c.c. of saline acidified with 2 drops of N/1 HCl and filtered through cotton has suddenly produced a steady rhythm and a rate of 80 as the drug was slowly injected into a vein. Auricular flutter will not respond to quinidine, but digitalis in adequate dosage will produce auricular fibrillation, after which the rhythm will become regular.

Heart block to rank as an emergency must have lasted long enough to cause fainting—heart standstill of four to eight seconds; a 15-second stop will produce a convulsion. By the time the doctor arrives the emergency is usually over, the rate back to normal, unless the block keeps shuttling from sinus to ventricular rhythm, producing successive faints or constant coma. If the patient is doing well on the slow rate it may be better to leave him on it; even to digitalize him to increase the block and keep his heart at the slower rate. If the patient is faint and weak on the slow rate the best emergency measure is injection of adrenalin in muscle or vein, 0.5 c.c. if hypertension exists, 1 c.c. otherwise. Aminophylline, 7½ grain ampule, may dilate the coronary arteries enough to reoxygenate the conduction pathway, restoring the normal sinus control. A shuttling heart block may produce long frightening periods of asystole with the patient turning livid, inject 1 c.c. of adrenalin into the heart; through the fourth interspace just to the left of the sternum insert a 3 inch needle boldly, and when blood can be withdrawn freely into the syringe, inject 1 c.c. of adrenalin.

Called for nocturnal dyspnea of left ventricular failure only a degree short of acute pulmonary edema, give nitroglycerin, grain 1/200. Sometimes a drink of brandy or whiskey at bedtime

produces enough vasodilation during the night to prevent recurrence; morphine, pantopon, or codeine is an old stand-by.

Think of *carotoid sinus syndrome* when a vagotonic, or neurovascular asthenic, or arteriosclerotic hypertensive type of person is subject to faints. Diagnosed by massage over the carotid sinus reproducing the faint, lowers the blood pressure, sometimes only slows the heart rate, or produces a transient asystole which frightens the observer with his hand on the pulse. The use of atropine in physiologic doses best dulls this reflex. The patient must be warned to wear a loose collar.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

EYE MANIFESTATIONS OF GENERAL DISEASES

A STUDY OF THE EYE often aids in making a diagnosis in many general diseases. It sometimes gives the only clinical evidence upon which a diagnosis may be determined, and more often this is true in chronic disease of an insidious and progressive nature. That more interest is not shown by the general physician in the evaluation of eye signs and symptoms is probably because to do so requires time, care and special equipment.

A systematic and practical method of examination of the eyes should be made in each case.

A great degree of bulging of the eyes with separation of the lids causing the patient to appear to stare, and lagging and edema of the lids suggest a toxic thyroid. Edema alone is commonly an allergic manifestation, although an arteriovenous aneurism or new growth behind the eye must be thought of. Poor convergence, ill-sustained ability to use the eyes for ordinary work, glimmering of sight and nervous instability argue likewise. Recent ptosis of a lid, recent squint of an eye, a dilated pupil or both pupils small and inactive to light suggest a cranial lesion which may be a tumor but more probably syphilis even though the history is negative for a specific lesion, and there are no other gross clinical findings. Styes, cysts and inflammation of the lids suggest defective vision, refraction errors, diabetes, allergic reactions, poor hygienic and dietary factors, and lice infestation of the lids. A pupil inactive to light and dilated, a red eye, pain in the eyeball, temple or cheek, and headache—sometimes with nausea and vomiting—suggest glaucoma; but an acute iritis, an acute exacerbation, or an intraöcular new growth may be the cause. Such a new growth may be seen with the ophthalmoscope.

The differential diagnosis of these conditions is difficult without special equipment and experience. If glaucoma be present, the use of atropine or any mydriatic and delay in procuring adequate treatment is fraught with grave danger to the eye. A pupil inactive to light and without eyeball redness suggests tabes and may be the only clinical sign then present; if dilated and fixed, chronic glaucoma. The globe may be very hard to touch, vision lowered, and the ophthalmoscope will show a deep optic cup and an atrophic nerve head. An inflamed globe, hazy cornea with new blood vessels in it, and old scars and ulcers suggest inherited syphilis, tuberculosis or diabetes. Faulty dietary and allergic reactions, especially in children and the aged, often give such findings.

Hemorrhages and exudates in the retinae and changes in the blood vessels therein diagnosticate cardio-renal vascular disease and blood dyscrasias, and less often tumor of the brain. Likewise swelling, congestion or atrophy of the optic nerve head denote renal-vascular disease, brain tumor, multiple sclerosis, syphilis, lead poisoning, wood alcohol poisoning and diabetes. Black exudates in the choroid, especially if confined to the maculae and the periphery of the fundi, strongly suggest syphilis. Grayish exudates scattered throughout the choroid are diagnostic of foci of infection in teeth, sinuses, tonsils or some remote organ. These findings, varying as to degree and intensity, may be the earliest clinical manifestation of the diseases named, and may be the principal clinical evidence upon which a diagnosis may be made.

Rapid changes in visual findings suggest diabetes, kidney disease, brain lesions terminal stages of vacular disease. In this connection glaucoma and cataract, usually confined first to one eye, should be suspected. Likewise ill-sustained ability to use the eyes, flashes of light, light discomfort, glimmering of vision, diplopia, and blind areas in the fields of vision and headache suggest either a general or special disease named; or migraine, allergic reactions or refractive errors. A careful history will bring out these subjective symptoms, and a thorough examination of the eyes will usually explain their origin. A history of frequent changes in glasses should immediately suggest some condition other than a refractive error, even though such an error was known to have been present necessitating the use of glasses.

Although it has been estimated that 60 to 75% of inorganic headaches are due to eye fatigue, usually the result of refractive errors, a careful eye examination is in order to determine this as a factor or to rule it out, ultimately to determine the origin of the headache. In the experience of the writer, refractive errors alone have not played a major role in the causation of headache.

Headache beginning in an apparently healthy

person in the 3rd or 4th decade of life with rapid and progressive deterioration of vision certainly argues for an ophthalmoscopic examination of the fundi, supplemented with a careful general physical examination. Many such patients have been seen whose initial symptom was headache for a period of months, who sought relief through the use of headache remedies of their own choosing or otherwise, and only when deterioration of vision supervened was an eye examination requested. Many of these show retinal hemorrhages and exudates and prove to be hypertension cases of a malignant type.

It is well to bear in mind that of all general diseases syphilis manifests itself in the eyes more than any other, and next in frequency is renal-vascular disease.

Case Reports

Case 1.—White man, aged 31, suddenly began to have discomfort in reading. No defect in vision. Promptly developed a divergent squint of left eye, double vision and a dilated pupil. No other clinical symptoms except easily fatigued and slight loss of weight. Married 5 years, 2 healthy children, youngest 5 months. Denied specific disease but when confronted with the diagnosis of probable syphilis and request for blood test confessed a small lesion on penis 1 year before marriage. Diagnosis confirmed by blood and spinal fluid Wassermann. Prompt anti-syphilitic treatment restored normal function of the eyes.

Case 2.—White man, aged 47, always enjoyed excellent health, general examination a year before present illness —condition reported excellent. Began in July 1935 to have an occasional early-morning headache. Never had a headache before. This became more frequent and more severe. Applied for eye examination Sept. 27th, 1935, because of rapid deterioration of vision. Eight years prior to this my records showed normal vision and normal fundi. When seen in September right eye practically blind and vision left very deficient. Fundi showed many retinal hemorrhages and exudates and neuritic changes in both optic-nerve heads. Diagnosis of renal-vascular disease confirmed by urinary analysis and blood pressure 230/120. Rapid general deterioration and died 5 months later.

Case 3.—White man, aged 46, manager of cotton mill, always enjoyed excellent health and had had no occasion to see a physician until began to have dull headaches and some irascibility and became easily fatigued. This state was followed by deterioration of vision which had previously been normal. Applied for eye examination because of defective sight. Eye findings similar to those of case 2. Diagnosis renal-vascular disease confirmed by urinary findings and blood pressure. Died 7 months later.

Case 4.—White woman, married, aged 43, for about 3 years had not felt well. When first examined by me in January 1935 because of moderate defect in vision and discomfort of the eyes for ordinary use, no other symptoms were found and she appeared healthy. Glasses prescribed at this time corrected vision to normal. In July 1936 she came complaining of increasing, ill-sustained ability to read, glimmering of light, heaviness of eyelids on awaking in the morning, dizziness, increasing nervousness; and when in bed, or if turned to the left, she had a sensation of falling. Examination at this time revealed an increased deterioration of vision not correctible to normal with glasses, and slight pallor of the temporal halves of the optic-nerve heads. Diagnosis from the eye findings was not established. Thyroid disease was suspected and the patient urged to have a general examination to include a metabolism test. This was reluctantly agreed to but was done and a diagnosis of toxic thyroid was established. Removal of the thyroid gland alleviated her symptoms with the restoration of good functional vision.

INSURANCE MEDICINE

H. F. Starr, M.D., *Editor*, Greensboro, N. C.

HYPOTENSION

Hypotension or low blood pressure may be due to physiological or pathological causes and its significance as to longevity and good health depends upon the cause.

Causes of Hypotension

Physiological: Some normal persons have a low blood pressure for no apparent reason. Low blood pressure is characteristic of certain races, notably the Chinese, Japanese, Filipinos, Hindus and American Indians. According to W. W. Cadbury[1] the blood pressure of Chinese students in Canton averaged 20 to 30 mm. less than that of Europeans and North Americans. Young women have blood pressure on the average of 3 to 4 mm. less than men, this difference in the sexes gradually decreasing until age 55. The difference is less for the diastolic than for the systolic pressure.

Pathological: In the pathological group nervous troubles are most commonly present. Low blood pressure may be temporary due to myocardial weakness, as in acute coronary myocarditis: more commonly it is due to disturbances of vasomotor tone, particularly in the peripheral vessels, and to blood volume, rather than to heart conditions. Roberts[2] found on examining 585 cases that "hypotensive persons have proportionately more normal hearts than have normal or hypertensive persons." Disturbances of the glands of internal secretion, particularly the thyroid and suprarenals, may be responsible for hypotension. It is often present in anemia, jaundice and chronic wasting diseases.

Effect on Mortality

With those cases belonging to the pathological group the prognosis of the underlying condition indicates the outlook, unless the hypotension is in such a degree as to create in itself a special hazard. In this discussion we shall limit our attention chiefly to those cases which belong to the group due to physiological causes, namely, those individuals whose blood pressure is low without apparent cause and without significant impairments or indications of disease. This is the group of cases sometimes labelled "essential hypotension", which simply means "hypotension, cause unknown".

These persons are inclined to live to an old age, as life insurance experience shows.

The following table represents the average normal blood pressures grouped by ages:

Average Blood Pressure Readings

Age	Average Systolic	Average Diastolic
20	120	79
25	121	80
30	122	81
35	123	82
40	125	83
45	127	84
50	129	85
55	131	86
60	134	87

The Joint Committee on Mortality of the Actuarial Society of America and Association of Life Insurance Medical Directors of America studied a vast amount of material relating to blood pressure and according to systolic blood pressure formed two groups: (1) Systolic blood pressure readings from 5 to 15 mm. below the average readings shown in the foregoing table; (2) Systolic blood pressure 5 to 15 mm. above the average. In the first group there were 3065 cases and in the second 3247 cases. It was found that the mortality experience of the group "under the average" systolic was 6% less than that of "average" systolic while the group "over the average" was 13% higher than that of the "average" group. The results indicate that a systolic blood pressure not more than 15 mm. below the average is more favorable as to longevity than an average pressure. The good effect of a low systolic blood pressure seems to be greatest at the older ages.

The Committee also made a study of the diastolic blood pressure similar to that made of the systolic. Two groups were formed: (1) persons with diastolic blood pressure 5 to 15 mm. *under* the average according to the table; (2) those with diastolic blood pressure 5 to 15 mm. *above* the average. In the first group, there were 2950, and in the second, 3388 cases. The mortality of the group "under the average" diastolic was 7% less than that of the "average" diastolic, while the group "over the average" was 15% higher than that of the "average" group. The indications are that a diastolic blood pressure slightly below the average is favorable while one higher than the average is unfavorable for longevity.

An investigation of the diastolic, with relation to the pulse, pressure indicates that variations in the diastolic pressures are more important than variations in the pulse pressure. The most favorable group consists of those with diastolic and pulse pressures below the average.

The individuals making up the foregoing groups were issued insurance at standard rates, there being no significant impairment present.

While a sufficiently large group of cases with extremely low blood pressure has not been studied to justify final conclusions, the indications are that systolic blood pressure as much as 30 mm. below the average has little if any unfavorable effect on mortality. A systolic blood pressure of as much as 30 to 40 mm. below the average seems to be only slightly unfavorable. Most underwriters approve applicants for standard insurance whose systolic blood pressures are as low as 100 mm., provided no pathological cause of the low blood pressure is found and the case is first-class in every respect. When the systolic blood pressure is 100 to 90 mm. much caution is exercised in approving for standard insurance, and below this the tendency is to charge an extra rating or decline.

Effect on Morbidity

Since hypotension of moderate degree has been shown to be favorable rather than unfavorable as to longevity, and there is no conclusive evidence that a fairly marked degree of hypotension is very unfavorable, the question arises as to the effect of hypotension on health. Bishop[3] observed that these individuals are neurasthenics and "live to a miserable old age and that all suffer from some circulatory defect". While people with hypotension are inclined to suffer from neurasthenia and vasomotor disturbances, they are not prone to become disabled for considerable periods of time. Among 120 consecutive clients of our own claiming total and permanent disability, 32 had systolic blood pressures 5 to 15 mm. above the average and only 13 had systolic blood pressures 5 to 15 mm. below the average when examined for insurance. There are only two whose systolic blood pressures were as low as 110 mm.: one of these is disabled on account of nephritis and the other on account of tuberculosis. Ordinarily in insurance examinations systolic blood pressure 5 to 15 mm. under the average is encountered almost as frequently as systolic blood pressure 5 to 15 mm. over the average. (The Committee studied 583,963 examinations and 3,065 had systolic blood pressure 5 to 15 mm. under the average and 3,247 had systolic blood pressure 5 to 15 mm. over the average.) The indications are that finding a moderately low systolic blood pressure does not justify the prediction that liability to invalidism at some later date is increased. The pace of the hypotensive patient may be slowed, but he does keep going.

Conclusions

1. The significance of low blood pressure depends upon the cause.

2. In otherwise normal individuals, systolic or diastolic blood pressure somewhat below the average is favorable to longevity. The effect of very low pressures has not been shown conclusively, but indications are that it is not very unfavorable.

3. Hypotension individuals may frequently not fel up to par, but they are not prone to suffer prolonged disability or invalidism.

4. The average blood pressure is not the most desirable blood pressure. When an otherwise normal individual is found to have a moderately low blood pressure, he is to be offered congratulations rather than a course of treatment to raise his blood pressure.

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HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

HOSPITALS AND TAXES

TAX MONEY is the hardest money to pay. The public, for the most part, has never been convinced that its tax dollar buys a hundred cents worth of benefits. This may be partly the fault of the individual, but it is mostly the fault of the governing bodies of the state, county, and city. If more effort were spent in showing the public just how its tax money is spent and why, more of us would pay taxes without grumbling. The mere fact that it is a law that an individual or corporation shall pay certain taxes is by no means convincing that it is a fair tax, nor does it guarantee the wise spending of the tax money on the part of the public servants.

It is partly the hospital's fault that the tax assessors continue to bear down and extract from them their hard-earned money, often without rhyme or reason. The hospital should advertise its business side to such an extent as to convince everyone that it is not a money-making proposition, that practically every dollar of its income is extracted from sick people who are not earning at the time they are receiving hospital care. Tax assessor's should realize that it is obligatory that the indigent sick be cared for, and most counties that the funds be provided by the governing bodies of the county. And it has been proven time and again that it costs the county or the city more per patient per day, when the patient is cared for in a county- or city-owned hospital. The citizenship in need is more generally served by hospitals than by any other institution . In one instance a group of county authorities refused to provide a community hospital but spent $250,000.00 of the taxpayers' money on remodeling an airport, when that particular county asset would serve less than one per cent of the population of the county.

If the proper attitude existed between the county and city authorities and the hospitals, there would seem to the writer no reason why the present law on the statute books of the State of North Carolina should not work without hardship on anyone, but be of vast benefit to the sick person whose earning capacity has been halted. This law states: "The city and county governing bodies are authorized to offset the taxes of any hospital against the charity work done for that community for which the hospital receives no pay." If the proper attitude does not exist then we may look for trouble one way or another until the big dog eats the little dog and there are no further oppositions or opinions.

Democracy was not built and founded upon such an attitude and those of us who allow this attitude to influence our conduct are poor citizens, whether we be public servants or privileged individuals. Such citizens do not deserve to live in a free country like America. It would be far better, therefore, that those who insist upon the big dog-little dog attitude abscond from our shores and leave it for those who believe in democracy, fair play and justice, and find themselves a country where their system is believed in and talked and practiced.

THERAPEUTICS

J. F. NASH, M. D., *Editor*, Saint Pauls, N. C.

THE VALUE OF PHYSICAL THERAPY IN INTERNAL MEDICINE

OUR PATIENTS suffer from lack of some of the things we could give them through physical therapy.

A great Philadelphia teacher[1] has written on this subject. We abstract:

There is no therapy less understood and less frequently employed by internists than physical therapy. In undergraduate as well as graduate medical courses, if taught at all, but little time is devoted to the subject. The physician, therefore, approaches the practice of medicine knowing little about one of the oldest and most useful branches of therapeutics. The proper application of these methods requires time and a certain dexterity. Since physicians have been loath to give of the former or to acquire the latter, the field of physical therapy has been neglected by the medical profession. The various procedures of this form of therapeusis have been delegated to technicians, who have been allowed to usurp the prescribing and direction.

Students of medicine, undergraduate and graduate, as well as interns and residents, should be taught that physical methods occupy a position of importance. It should be emphasized that physical therapy is founded on procedures that are easy,

1. G. M. Piersol, Philadelphia, in the *Jl. A. M. A.*, vol. 117, pp. 1835-1839.

readily available and require for their proper application no elaborate equipment.

No attempt will be made here to deal with electrotherapeutics and radiation therapy. All physicians should have sufficient working knowledge to supervise and direct the intelligent use, even though they lack the skill to carry out massage exercise, heat therapy and hydrotherapy.

Pemberton says of massage: "There is probably no measure of equal known value which is so inadequately understood and utilized by the profession as a whole." Responsibility for all forms of therapy is the physician's. It is as unjustifiable to shift that responsibility to a technician in the case of massage, as it would be for the doctor to delegate the details of drug treatment to a druggist.

Even after vigorous massage there is no production of lactic acid in the muscles, consequently none of the acidosis of exercise. The dilatation that follows light pressure is transitory; heavier pressure causes more extensive and persistent widening of the capillaries. Massage causes an increased rate of blood flow and changes in the vessel walls, followed by an increased interchange of substances between the blood and tissue cells and consequent improvement in metabolism.

The return flow of the venous blood and lymph to the heart in the presence of edema is facilitated by even light centripetal stroking. Since by pressure fluids can be displaced from the subcutaneous tissues, massage may play a useful role in the relief of edematous states. Massage increases the number of red blood cells and the amount of hemoglobin in the circulating blood, even in anemic states. Properly applied, massage may cause either a sedative or a stimulating effect.

There is no support for the belief that massage ever removed collections of adipose tissue from various parts of the body, nor does massage increase muscular strength. Massage has little effect on general metabolism.

Massage has its greatest value in chronic states that involve long periods of inactivity which bring about atrophy of muscular tissue. It has become indispensable in arthritis and allied rheumatic conditions, in fibrositis and other muscular derangements. It is almost equally useful in prolonged convalescence, in functional nervous disorders and asthenic states. In certain stages of chronic cardiac failure massage will help restore circulatory equilibrium and remove edema, a fact which has been generally overlooked.

In the past 50 years the trend in exercise has been toward less formal gymnastics, more sport activities and more corrective exercises. Physicians should acquaint themselves with the indications for the various types of exercise and be willing to supervise their application. One is prone to think of exercise as a means of increasing muscular strength rather than as an aid in restoring normal function.

When a muscle contracts, glycogen disappears, lactic acid accumulates and carbon dioxide is driven off. With the accumulation of lactic acid further muscular effort is dependent on oxidation. In this phase, in the presence of adequate oxygen, the lactic acid disappears, glycogen reäccumulates and the muscles return to a state of alkalinity. If muscular effort is to be continued, large amounts of oxygen must be available; therefore, during exercise there is an increased pulse rate, a larger output of blood, an elevated blood pressure and a more rapid respiratory rate. These vary with the rapidity, severity and duration of the muscular effort according to the degree of training of the person.

The harmful effects of poor posture as to various disease conditions and on the moral and psychology of patients are well known.

Internists might well be more alive to the value of certain forms of exercise in the treatment of cardiac disease. Today graduated hill-climbing exercises for certain cardiac patients are largely overlooked by clinicians, and rarely employed except at some health resorts Resistance exercises can be carried out by trained attendants with little exertion and no fatigue to the patient. In the presence of decompensation rest is essential, but many cardiac patients are forced into invalidism because the avoidance of all forms of exertion is insisted on unnecessarily.

Careful judgment should be shown in prescribing exercises for middle-aged and older persons, particularly those who have, early and often, symptomless cardiovascular disturbances. Printed instructions for a set of simple exercises, with modifications and restrictions suited to their needs, and handbooks on exercise endorsed by the Council on Physical Therapy of the A. M. A. are available.

One of the most valuable curative agents is external heat. Artificial fever may be brought about by hot tub baths, by hot packs, or by complicated heat cabinets. Patients who are subjected to it should be selected with the greatest care. Fever therapy has been employed for more than 50 diseases, in the majority of which it has proved of little value. It has been found of advantage in syphilis, particular of the central nervous system. Gonorrhea and its complications, atrophic arthritis, undulant fever, rheumatic fever, bronchial asthma and some forms of neuritis have shown a favorable response to this form of therapy.

The general application of heat is much more often employed to bring about various degrees of sweating, by the use of hot packs of various kinds, steam baths, hot room and cabinet baths. The

heat, dry or moist, is maintained not more than 30 minutes even when free sweating is to be induced. Whatever rise in body temperature occurs is but slight and transient. Devices for inducing sweats form an important part of all physical therapeutic establishments and are the basis for the Turkish baths.

This form of therapy, practiced to excess or unsupervised, may be dangerous, even fatal. To offset the dehydration with its atendant loss of electrolytes, adequate amounts of water and in some instances sodium chloride should be administered during the sweat.

The general application of heat is of value in some cases of arthritis, fibrositis and allied conditions. For promoting loss of weight it is of little value. In acute and chronic glomerular nephritis with nitrogen retention and threatened renal toxemia, since the nonprotein nitrogen of the blood is little if any reduced, the use of sweats has lost much of its favor.

The effects of local applications of heat differ but little, whether conductive, convective or conversive (diathermy) heat is used, with the exception that the former is least, the latter most, penetrating.

The indications for the use of local heating are many and are essentially similar whether the heat used is of one kind or of another. Among the conditions for which local heat is recommended, again arthritis and rheumatic states come first. It has been used in many inflammatory conditions, especially pelvic, as well as in traumatic conditions and in peripheral vascular diseases.

The indications for use of the visible and infrared rays differ but little from those for the general and local application of heat. Ultraviolet radiation is almost specific in rickets and tetany and of merit in many cutaneous diseases and in calcium- and phosphorus-deficiency states. The Council on Physical Therapy is doing valuable work in the standardization of light therapy which should be more fully appreciated. Its indiscriminate use by those who know little of its physiologic effects should be controlled.

Simon Baruch developed this form of hydrotherapy in America. The stimulating, tonic and sedative effects of baths of varying temperatures and different mechanical forms are generally understood. The neuropsychiatrists have long appreciated the value of prolonged tepid or warm baths in the control of maniacal states. Hydrotherapy should be resorted to more often in the management of many forms of excitement and insomnia instead of overwhelming such patients with sedative drugs.

The chief physiologic effect of applying water to the body is to cause changes in temperature. This fact furnished a basis for the use of cold baths in the control of fever. Brand bath, which did much to revolutionize the treatment of typhoid, is no more specific for typhoid than for any other long-continued fever and toxemia. Its effect is not to reduce a rise in temperature so much as to improve the vasomotor tone, lessen the pulse rate, increase the blood pressure and control the nervous manifestations.

To obtain the benefits of baths, it is not necessary to go to the spas.

If physical therapy is to remain under the control of physicians and advance as it should along sound scientific lines, the indifference which internists as a group have displayed must give way to an active interest in developing a constructive, forward-looking policy to improve the practice of and extend education in physical therapy.

OBSTETRICS

HENRY J. LANGSTON, M.D., *Editor*, Danville, Va.

VACCINATION AGAINST PUERPERAL INFECTIONS

PUERPERAL INFECTIONS, although now rare, are common enough, and severe enough to oblige all who have to do with the management of pregnancy and labor to pay attention to reports from trustworthy sources of the use of any measures holding out promise of further reducing these infections.

Here is abstracted such a report[1]:

Investigations in immunity to puerperal sepsis have added much to the knowledge of immunity to certain strains of the streptococcus and have emphasized the importance of natural resistance in combating and eradicating infection.

The authors have undertaken to culture the types of organisms commonly found in puerperal infection, test their effect upon laboratory animals, and, by means of a vaccine made from the cultures, to elevate the immunity of the pergnant woman to infection in general.

In 1936 we presented our first report on 51 vaccinated pregnant women. In 1939 there were 177 similar vaccination cases reported by us. At present, our group includes 274 additional patients who were vaccinated in the same manner and under the same conditions as were the two former groups.

The study was conducted entirely on patients attending the antenatal clinic of the Jefferson Medical Hospital, acceptance depending entirely upon their willingness to cooperate in this study. Routine studies on these women consisted of complete history and physical examination, urinalysis, blood pressure and weight determination (at each weekly visit), ordinary blood count, blood Wassermann and Kahn tests.

These patients were delivered in the hospital ward and their homes by senior students. The individual men were unaware that their patients had been vaccinated.

All injections were administered with a tuberculin syringe and a 25-gauge hypodermic needle. The skin at the site of inoculation was prepared by cleansing with sterile water and sponging with with 95% alcohol. Each patient was first given an *intra*cutaneous injection of ½ minim of vaccine on the flexor surface of the forearm, and then observed for local and general reactions at from 1-day to 3-day intervals. Subsequent injections were given at weekly intervals, intramuscularly in the deltoid region; initial injection 1 minim, second 2 minims, subsequent injections, 4, 8, 12, and 16 minims.

The majority of the patients received their vaccinations from the fourth to the ninth month. Time of gestation, when they registered as outpatients.

Two hundred and one patients in this series delivered spontaneously.

Our criteria for puerperal morbidity are based upon the accepted standard at the Jefferson Medical College Hospital—any fever of 100.4° F. on any two readings, or two successive readings, exclusive of the first 24 hours following delivery.

In our series of vaccinated cases, 9 patients were morbid during the puerperium, a total of *3.28%*, as compared with the non-vaccinated group for the same period who showed a puerperal morbidity of *23.33%*.

The safety and absence of reactions to the vaccine were demonstrated.

Pre-existing conditions in these cases, whether acute or chronic, were not aggravated by vaccination.

A larger series of patients are being vaccinated, and the special studies which have been conducted on the vaccinated patients' serum substantiate our results. We hope to have a report in the near future on these studies.

TUBERCULOSIS

J. Donnelly, M. D., *Editor*, Charlotte, N. C.

TUBERCULOSIS IN THE MENTALLY ILL

Treatment of tuberculosis in individuals mentally ill is, as a rule, very discouraging. Tuberculous patients who have only moods of depression and anxiety do not respond to sanatorium treatment or thoracic surgery as well as do those without such handicaps. In the May issue of *Diseases of the Chest*, Leonidoff takes account of the difficulties of diagnosis and treatment. Diagnosis is principally by x-ray examination. It is almost impossible to examine the chest or get sputum specimens, or a reliable history of pleurisy or hemoptysis. Few patients can give any information as to their symptoms, and the patient makes proper examination impossible. The disturbed type of patient presents the most troublesome problem, for often patients in institutions have to be transferred to another service for special psychiatric treatment, thereby increasing the chances of spread of infection among the non-tuberculous.

Sanatorium regimen is impossible for the insane. They are restless, often refuse food, and at times become violent, using the shot-bags as deadly weapons. Their disregard of the simplest hygienic instruction endangers the health of nurses and attendants. For this reason, the author says, all employees in the tuberculosis service of a mental institution should be examined by x-rays every four months. In the author's institution, in spite of these numerous difficulties, artificial pneumothorax has been given 66 of 216 tuberculous patients. The indications for the attempt at collapse therapy were the same as for any tuberculous patient, while the contraindications were many—active trouble in the opposite lung, emphysema, asthma, hypertension and cardiac decompensation with dyspnea and cyanosis. In 12 of the 66 patients no free space was found, and pneumothorax could not be induced.

In addition to the usual difficulty met in instituting collapse therapy in mental cases, a large group show such indifference to the initial introduction of air, and are so restless and fearful, and cannot or will not stay in bed for the necessary time between treatments, as to give little hope of good results. Also, refusal to eat properly is common for long periods of time even among those who are coöperative enough for collapse to be maintained. In order to decide whether pneumothorax or thoracopylasty is the treatment indicated, it is often necessary to approach the problem from both the medical and the psychiatric viewpoint. The two most important questions are, (1) Will the patient be able to coöperate over the long time necessary for pneumothorax? (2) What is the patient's psychiatric prognosis? The surgeon should go over the psychiatric condition with the physician who has charge of the patient's original service. It is the author's opinion that thoracoplasty should be used in some cases as a last resort when other types of treatment cannot be used.

Empyema treatment in mental patients is much more troublesome than pneumothorax. Rib resection for empyema, with its profuse discharge and frequent dressings, in most instances gives very unsatisfactory results. The author considers pneumolysis a valuable operation in a small percentage of patients, but states that it requires skilled post-

operative management and is not entirely free from complications. Phrenic nerve interruption is of some value, but is contraindicated in cases when the cavities are kept from closing by lateral adhesions, are adherent to the chest wall, or in cases with multiple and very large cavities. Phrenic nerve surgery, however, is of service in cases in which pneumothorax is ineffective, due to apical and diaphragmatic adhesions.

Such patients often remove dressings and scratch their wounds; so occasionally their arms have to be put in casts. Sandbags, shotbags, etc., have been found useful in treatment of other patients, but these cannot be used in treatment of tuberculosis in the insane. The writer says that tuberculosis in the insane must be diagnosed as early as possible so that such mechanical contrivances will not be necessary. Chemotherapy in the treatment of tuberculosis is regarded as in the experimental stage.

In the author's opinion the complications of pneumothorax treatment act unfavorably on the mental condition of insane patients, and it would be better if thoracoplasty were used in the first place; pneumothorax in his cases was a waste of time.

Dr. Leonidoff arrives at the following conclusions: (1) that the usual method of treatment of tuberculosis is not applicable to most psychiatric patients; (2) early diagnosis and segregation of tuberculous insane patients is especially important; (3) there is a need for further segregation of coöperative from non-coöperative tuberculous patients; (4) spread of the disease into the opposite lung is the most serious and frequent complication; (5) artificial pneumothorax is usually not a successful method of treatment; (6) mental instability and unpredictable behavior of the patient are usually responsible for the failure of pneumothorax treatment; (7) early thoracoplasty should be attempted rather than run the risk of prolonged pneumothorax; (8) the appointment of state thoracic surgeons to take care of necessary thoracic surgery is advisable; (9) there should be a law allowing operation on the insane tuberculous patient without approval of relatives; (10) state and federal governments should recognize the fact that state hospitals are under-staffed and should remedy the condition; and (11) all employees in tuberculous units should be carefully watched for possible reinfection, and should have frequent examinations, including those by x-rays.

TREATMENT OF GAS GANGRENE

(J. O. Warfield, Jr., Washington, in *Med. An. D. C.*, May)

Early and thorough surgical care of infected wounds is the most important prophylactic measure. Amputation should probably not be employed early in the course of the infection. *Anti-gas bacillus serum*, though *still of debatable value*, is probably of more value as a prophylactic agent. Very large dosages are recommended by some.

More extensive use of x-ray therapy is certainly justified.

The early local application of sulfathiazole is of value prophylactically.

Gas gangrene is such a rapid, crippling and often fatal infection that one is not justified in omitting any prophylactic or therapeutic procedure which offers any hope or benefit.

INTERNAL MEDICINE

GEORGE R. WILKINSON, M.D., *Editor*, Greenville, S. C

NEUROLOGIC DISEASE CONDITIONS LONG AFTER INJURY TO THE NERVOUS SYSTEM

EVERY DOCTOR has need to know all that he can about injuries—the recognition of their gravity; which should be treated heroically and which let alone severely; what to expect in the next few hours or days; what to warn against as possible or probable developments in few or many years.

Here, in essentials, is a meaty article[1] conveying just this information as to a class of injuries among the gravest.

Injury to the nervous system may have residual effects of long or permanent duration, or it may engender a complete new array of complications. If it is true that the spinal fluid of half of all newborn infants contains free blood, then the act of being born is one of the most dangerous experiences of a lifetime.

The great American sport is not bullfighting but the raw passion of murder of our fellows on the highways. More than half of the major head-brain injuries are caused by the automobile.

Damage to the brain generally is greatest at the site of impact, but it may be greater at the opposite pole. Large and small hemorrhages are common in the white matter adjacent to the ventricles and in the brain stem. Damage is added to by anoxemia, edema and fat embolism after fractures or burns. Glial elements spring into activity and contract. The most characteristic late defects are scars at the summits of the convolutions. Already existent arteriosclerosis or alcoholism may interfere with restitution of tissue to health.

Organic and functional disturbances frequently coëxist. What sort of person was he before he was hurt? is an important question.

Hysteria is the unconscious conversion of emotion into physical disability; malingering is a conscious act of deception. The patient may groan and put forth a show of disability, then fail to follow the examiner's receding hand with the sup-

1. H. W. Woltman, Rochester, Minn. in *Wisc. Med. Jl*, May

posedly weak extremity; or acquire and discard anesthesias on suggestion, and then blithely button up his collar with an allegedly anesthetic hand.

The presence or absence of fracture of the skull is of little value in assessment of the probable degree of resultant disability. Old patients have graver prognoses. There is no evidence that early resumption of work is harmful, provided no severe symptoms are present.

When a patient who complains of vertigo when he attempts his work sits quietly on the examination table nystagmus frequently is not found. Headache and giddiness may last for years, and the treatment is not satisfactory. Insufflation of air by the spinal route has been disappointing.

Ask the patient what he can recall of the accident. A quarryman who says that he is well except for inability to use his right arm and leg may recall having carried his lunch pail to the quarry. He was told later, but cannot remember it himself, that the blast occurred at 3 p. m. and that a rock hit him on the head. The next thing he can recall is that a nurse was bathing him a week later. That fussy woman who complains of so many things can recall that she was sitting near the front of a street car when it stopped suddenly and a suitcase fell from the rack and struck her head where it now hurts. She lost consciousness at once, had to be carried to a drug store, and a few hours later, when she regained her senses, she was aware of the pain which has been there ever since. The retrograde amnesia exhibited by the first patient is characteristic of true concussion. This may be followed by a period of excitement and this in turn by a period of confusion.

The prognosis for recovery from these states of aberration is good, even though they may last many weeks. After this there may follow, rarely, an organic type of dementia that may be permanent. Disorders of behavior are more common, more serious and more lasting among children than among adults. Pictures of schizophrenia, paranoia and manic-depressive psychosis may ensue. A patient who has had previous attacks of manic-depressive psychosis may suffer recurrence of such attacks immediately after an accident. Psychosis may be cured by a blow on the head.

Paralysis, hemianopsia or aphasia may result. Involvement of the vegatative apparatus may cause diabetes insipidus, diabetes mellitus, obesity, testicular atrophy and impotence, peptic ulcer, paroxysmal hypertension, fever, tachycardia or narcolepsy.

Epilepsy may appear many years after the injury. It is well to remember that 35% of normal persons report having sustained some injury to the head. One of the lower figures is that epilepsy follows injury to the brain in less than 2% of cases. Of gunshot wounds of the brain, 20% of those not fatal; whereas the incidence of convulsions with tumors of the brain is 21.6%.

Any of the cranial nerves may be damaged permanently by injury to the head; most commonly injured is the 8th cranial. Facial paralysis usually does not appear until a day or more after the accident, usually recovers spontaneously; but for faulty regeneration of the nerve there is no satisfactory treatment. Loss of smell is not unusual. Sudden unilateral blindness with subsequent simple atrophy may follow a blow, especially over the brow.

Cerebrospinal rhinorrhea may last many months and was a dreaded complication before the advent of chemotherapy.

Obstruction of the aqueduct of Sylvius or adhesions in the posterior fossa may lead to hydrocephalus, persistent or intermittent. Sometimes restriction of the intake of fluid and the administration of ammonium chloride may tide the patient over the critical period and allow for the reëstablishment of natural drainage. Meningitis or abscess of the brain may flare up years after the injury.

A not infrequent complication which must always be watched for is chronic subdural hematoma. Some weeks after an injury to the head, and it need not be a severe injury, recurrence or accentuation of the headache may be noted, often with increase in intracranial pressure. Gradually increasing hemiplegia and stupor may follow with reptilian stare suggestive of the nature and seriousness of the condition; usually there is no fracture of the skull, yet the patient within a few hours will be dead or, if trephination is done promptly and this blood evacuated, cheerful and very much alive. Hemiplegia occurs often on the same side as that of the clot, and often there is a clot on both sides. There may be, rarely, a hydroma, which is a pocket of cerebrospinal fluid.

It is not unlikely that the symptoms of multiple sclerosis may be accentuated by injury to the head.

Injuries of the spinal cord usually are closed. Open wounds, because of concomitant injuries of other structures, lead to a fatal outcome and are seen seldom. In an injury to the spine the damage is instantaneous, laminectomy usually offers little. Intelligent, sympathetic and tireless nursing care is of prime importance in the prevention of late effects which usually become such trying problems.

The most dangerous result is loss of bladder function. The ideal management of the incontinent bladder is tidal drainage, Munro and 5 to

7½ grains of sulfathiazole t.i.d. Transurethral resection of the internal vesical sphincter may be useful.

To prevent bedsores frequent changes of posture, distribution of pressure, and maintenance of the circulation—best by means of a water bed. Substitutes are an air pillow, a continuous bath, a sheep's pelt, a pillow placed under the knees, lumbar region and ankles, or a sawdust bed. Instead of employment of numerous lotions, stimulants, astringents, coagulants, lights and radiation agents, the edges of the wound are to be drawn together, and the lesions covered with two layers of elastoplast and forgotten about until the dressing falls off or leaks; then the performance is repeated, without washing, until the wound has healed. Provide for the creation of interests, occupation and amusement. Best possible use must be made of the muscles that remain and in this respect the physical therapist and the orthopedist can be of much help.

Pain along the distribution of a nerve root is often relieved by paravertebral injection of alcohol—*preceded* with a test injection of a local anesthetic agent, since the injection of alcohol may only make matters worse. Intraspinal section of the offending root is required in some cases.

The development of adhesions between the arachnoid and the cord may result in gradually progressing paraplegia.

After cervical laminectomy gradually progressive compression of the cord may appear. Lateral röntgenograms may disclose dislocation due to loss of support of the pedicles. Traction and support of the head usually cause the symptoms to leave within a few days.

Protusion of an intervertebral disk may result from injury, and this in turn lead to backache and sciatic neuritis.

Progressive muscular atrophy in some instances comes on shortly after injury, beginning at the site of trauma, strongly suggesting a causative relationship.

Tardy ulnar palsy may follow fracture of the elbow. The average age at which a patient sus-20— .... tains this fracture is 7½ years, whereas the average age of onset of the ulnar palsy is 40 years. Transplantation of the nerve to a position of safety on the anterior aspect of the arm, if done early enough, arrests the progress of the disability and may result in a cure.

Arthritis of the wrist joint, because of the limited space between the bones and the anterior annular ligament, may compress the median nerve. Trophic ulcers may appear on the index and middle fingers; sensation and motility will be found to be impaired. Section of the annular ligament may lead to rapid subsidence of the neuritis and to healing of the ulcers.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

THE PRESENT STATUS OF VITAMINS IN NEUROLOGY AND PSYCHIATRY

MANY are the patients who come to us complaining of symptoms which do not conform to the pattern of any condition we have been recognizing as a disease.

The following abstract[1] should prove helpful.

Vitamin A. Carotene, a yellow substance in certain plants, is converted by a liver enzyme into A, and the liver is a storage depot for carotene. A is found abundantly in fish oils, egg yolks, butter and cream. Deficiency of A causes burning, itching and dryness of eyes, photophobia, difficulty in reading over 10 to 15 minutes especially at night, momentary attacks of blurring of vision at end of day, difficulty when viewing movies, dizziness, or even complete night blindness; the skin over the extensor surfaces of the forearms, legs and thighs takes on a hard, papular character; may lead to dental caries. To cure results of such deficiency, A or carotene in oil or oleum percomorphum is used—10,000 to 50,000 units daily.

B Complex contains at least 12 fractions, four of which are now available for clinical use, namely: B_1 or Thiamin chloride; B_2, G, or Riboflavin; Nicotinic acid or the P.-P. factor and Pantothenic acid.

B_1 is found in yeast, milk, egg yolk, pork, etc. B_1 deficiency is partly responsible for the disturbances of the central nervous system, and for the degeneration of the peripheral nerves. Gross B_1 deficiency causes beriberi; the milder and partial deficiency states often escape recognition. In the suggestive stage anorexia, fatigue, heaviness of the legs, calf-muscle cramps, paresthesias in the toes and fingers, loss of vibratory sensation in the toes. Mild stage—absent ankle jerks. Moderate stage—advance in the sensory and motor changes, loss of the knee jerks, impaired position sense in the toes and atrophy of calf muscles and foot-drop. Severe stage—involvement of the upper extremities, of the spinal cord, or of the cranial nerves.

Simulated neurotic and psychotic pictures are characteristics of thiamin, riboflavin, or nicotinic-acid deficiency states, or of a combination of all three; therefore, it is wise to give all three vitamins in B_1 deficiency. Children receive five mg. thiamin intravenously or intramuscularly daily, plus 10 mg. by mouth. For adults 20 to 100 mg. doses. Large

1. J. A. Willie, Oklahoma City, in *Jl. Okla. Med. Asso.*, March

doses may cause herpes zoster. If any intense burning pain develops in any part of the body during thiamin therapy, then B_1 must be discontinued immediately. Apparently, suprarenal cortex given in conjunction enhances the effects of B_1.

B_2, G, or Riboflavin deficiency usually begins with pallor of mucosa in the angles of the mouth, followed by superficial transverse fissures and reddened, macerated areas in the angles and a greasy desquamation in the nasolabial folds and on the nose, with itching and burning of the eyes, photophobia, excessive dryness of the conjunctiva or excessive lacrimation, keratitis, vascularization and opacities of the cornea, and abnormal pigmentation of the iris, failing vision. Three to five mg. riboflavin orally or intravenously in one to six doses, plus 50 to 75 mg. of brewer's yeast, is sufficient.

Gross deficiency of Nicotinic acid leads to pellagra. When mental aberrations occur singly, many such patients are labeled neurotic. Five hundred to 1,000 mg. of nicotinic acid daily or 50 to 80 mg. intravenously daily, in 10 to 15 mg. doses, dissolved in saline solution. Apparently the addition of nicotinic acid or of the amide to the diet produces a much larger food intake and better weight for any individual.

Pantotheic acid is little understood as yet.

C, or Ascorbic acid, occurs principally in milk, parsley, peppers, raw liver and watercress. C seems to be stored in the adrenal cortex. Gross C deficiency state is scurvy. Subacute scurvy is generally unrecognized as the cause of a low state of health with fatigue, sallow complexion, and fleeting pains in the bones. Dental caries is thought to be an early sign of latent scurvy. C deficiency also has some relationship to certain hemorrhagic states and to some macrocytic anemias.

D is found principally in liver oils of fish, egg yolks, butter, milk, and cream. It has to do with the retention of calcium and phosphorus in the bones. D deficiency states are rickets, tetany, dental caries, and possibly osteomalacia. Usually as much as 500,000 international units of D_2 (calciferol) are given weekly by mouth in an oily solution with milk. One-half the dose is given on the third day and the other half on the seventh day of each week, some danger of causing hypervitaminosis D. Excessive deposition of calcium is reversible if vitamin is discontinued immediately. Any renal mpairment or arteriosclerosis contraindicates excessive doses of D.

E is found principally in wheat germ oil, in lettuce, spinach and cabbage. Lack in the male is thought to cause destruction of the germinative cells, and in the female to favor spontaneous abortions and sterility. Apparently anterior pituitary substances can be substituted for E.

Vitamin K is only mentioned, as its uses lie outside the fields of neurology and psychiatry.

PEDIATRICS

Edwin L. Kendig, Jr., M.D., *Editor*, Richmond, Va.

WHY SCHOOL CHILDREN FAIL

The physician should understand all the causes of school failure and be able to advise parents and influence those who plan curricula.

A Minnesota[1] pediatrician has thought on this subject, and something of his thought is passed on to you.

The average American child enters public school at the age of six. If during his school career he falls below his grade for his age he is considered retarded. By this criterion one-third are retarded or are failing in the elementary schools.

Some causes are found within the child, e.g., poor natural endowment; others in its environment; still others in faulty teaching.

Before a child starts to school a routine intelligence test should be made, supplemented by a personality study; the family physician can easily learn to give a Binet-Simon test. Children with an I.Q. of 70 or under are to be considered feebleminded—in most cases congenitally. A small number become so because of hydrocephalus, birthpalsy, meningitis, encephalitis, syphilis, epilepsy, and thyroid disease. Sixty per cent of the cases of educational backwardness fall in the class of *dull*.

By themselves, stigmata of degeneration should never be taken as evidence of feeble-mindedness. In a child known to be retarded in school, the presence of these stigmata may mean that this retardation is the result of inherent permanent inadequacy.

The defective child ties his shoes with difficulty; he blunders buttoning his coat. His speech is impaired. He lacks acuteness of perception, knows no self-criticism, possesses no foresight, prudence or inventiveness. What little attention he gives is easily distracted by trifling environmental stimuli. Even in the presence of normal mental capacity scholarship may be inferior. From inadequate diet, insufficient or disturbed sleep, or prolonged and excessive physical activity. Another factor often operative is organic physical inadequacy. Physical defects and physical disease should be diagnosed and treated.

Very important are the socioeconomic factors. Poverty deprives him of proper food, proper sleep,

1. Max Seham, Minneapolis, in *Jl-Lancet*, May

proper clothing, and proper housing.

The more the private practitioner takes to himself the allied branches of sociology, educational and medical psychology, the more successful will he be in the diagnosis and treatment of the retarded child.

UROLOGY

Raymond Thompson, M.D., *Editor*, Charlotte, N. C.

INTERSTITIAL CYSTITIS

Many different titles—elusive ulcer, irritable female bladder, cystitis parenchymatosa, paracystitis, ulcerative cystitis, circumscribed panmural cystitis, ulcus simplex, panmural fibrosis, localized submucous fibrosis, Hunner's ulcer, bladder fissure, submucous ulcer, submucous cystitis, localized myostitis of the bladder wall—have been given this condition. It is described by Dorland as, "a myositic ulcer occurring in the dome or vertex of the bladder wall, with normal cell infiltration".[1]

History

The history of this disease extends back to 1836 when Mercier called atention to ulcers in the bladder. Only when Hunner presented his exhaustive paper on elusive ulcer in 1914 was the disease recognized as a distinct clinical and pathologic entity. Many clinicians have contributed to diagnosis and treatment of this disease.

Etiology

Nothing specific has been proven as to any etiologic factor.

The ratio of women to men is 4 to 1. Age range is from 18 to 77 years. Childbearing and social status have no bearing. No typical case has been observed to follow gonorrhea, pelvic operation, catheterization, or pregnancy and labor.

Hunner contends that in 50 to 60 per cent of the cases there coexists ureteral stricture or some dormant renal infection. The pH of the urine bears no relation to the disease. No ulcers have been seen in a typical neurogenic bladder.

It has been contended that certain strains of streptococci have a selective affinity for the bladder wall, and that focal infection plays a major part in causation of the disease. Nevertheless, there is little agreement as to the hematogenous route of infection.

Pathology

The bladder wall is thick as a result of fibrous-tissue replacement. The peritoneum adjacent to the ulcer is thickened, the musculature hypertrophied. Capillaries in that region are many, and stuffed with leucocytes. There is vascular and perivascular polymorphonuclear invasion of the blood vessels, in many instances a leucocytic thrombus and a leucocytic involvement of the coats is such as to justify the terms acute exudative arteritis and phlebitis. Cellular infiltration includes also plasma cells, lymphoid cells and small round cells.

Diagnosis

Symptoms and findings are so distinctive that the diagnosis can usually be made from the history, the gross appearance of the urine and the bladder capacity.

Frequency of urination is present night and day. It does not always bear direct relation to bladder capacity, but when the patient must void every 10 or 15 minutes the bladder capacity will usually be found to be from 30 to 90 c.c.

Suprapubic pain, usually sharp and cutting, is brought on and intensified by bladder distension. It may be local over the bladder or may radiate into the pelvis, lower abdomen or back, thereby confusing the clinical picture. Such findings may mislead the clinician, but measuring the bladder capacity will usually put him right.

Submucosal fibrosis prevents normal vesical expansion. At times, the bladder cannot be dilated, even with the patient under profound anesthesia. Sometimes the capacity is less than 2 ounces. Reduced bladder capacity is such a constant finding that the surgeon should always measure the bladder capacity when the patient has frequency, before operating for pelvic or abdominal conditions.

Though the urine is usually sparkling clear, laboratory examination usually reveals a few leucocytes and a few red blood cells; at times there is gross hematuria. Organisms present are evidence of infection, necessitating a study of the upper urinary tract before a diagnosis can be made.

When the diagnosis is doubtful, cystoscopic examination will give information as to the presence of trigonitis, urethritis, or other conditions causing vesical disturbance, as well as of ulcers.

At times the ulcer appears as an abnormal redness of the bladder wall or a convergence of blood vessels; it may appear indurated with irregular extensions. Distension of the bladder causes a break in the mucosa and bleeding at site of the ulcer, a condition which is of diagnostic value and serves as a guide to treatment.

Treatment

Dodson, in 1926, recommended this method:

The patient on the treatment table, and the bladder is emptied by a catheter, and irrigated with sterile water. Then 4 cc. of ¼ per cent solution of silver nitrate is injected into the bladder, and the catheter clamped until the patient is aware of a smarting and burning. Then the solution is evacuated, and the bladder again washed with sterile water, and 5 or 6 c.c. of nupercaine solution, 1 to 500, injected and the catheter withdrawn.

1. Nelson, O. A., Pinard, Carl J. Jr., *Northwest Med.*, 40:230, July, 1941.

The nupercaine solution is to be retained as long as possible.

If tolerance is good, the strength of the silver solution is to be increased gradually up to 2 per cent. They should be given twice a week at first; when the patient is quite comfortable, the intervals may be increased to one, and later to two, weeks. If progress is satisfactory, it is well to continue treatments for several weeks after symptoms have disappeared.

Concomitant pyogenic infections must be treated. If there is considerable cicatrization of the ulcers, fulguration and hydraulic dilatation must be carried out under profound anesthesia. Fulguration must be thorough and extend well beyond the margin of each ulcer. Perforation and extravasation are likely to result from overdistension or intensive fulguration of any one area, or from the bladder wall being thinned by distension. Repeated fulguration and distension at intervals of three or four weeks may be necessary.

Recurrence is frequent but usually milder than the primary attack. Patients failing to get relief from the conservative procedures and suffering intensely should have uretero-intestinal anastomosis. Such operations, when performed for interstitial cystitis, do not carry so high a mortality rate as when done for carcinoma of the bladder or urethra, as cystectomy is not necessary. The results are usually very good.

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

REPORT OF 661 NAIL PUNCTURE WOUNDS OF THE FOOT

A LOT OF SENSIBLE GENERAL PRACTITIONERS have been using about this plan of treatment for a long time; but its a comfort to be backed up by an article[1] in the Journal of the A.M.A.

Not enough of us use tetanus antitoxin as a routine. Let's start that right now.

Most authors advocate probing the wound, laying it open, injecting phenol or tincture of iodine, and instituting some form of drainage. Such treatment is unnecessary, painful and harmful. The introduction of a drain into a noninfected wound tends to convert it into an infected wound.

By the time a patient walks to the doctor the fascial planes have slid over one another so that one is dealing with a tract that resembles a staircase more than a straight line. In attempting to probe one injures tissue not injured by the nail and opens new tissue planes to infection.

The following simple plan of treatment was used: the foot was soaked for 15 to 30 minutes in hot water, dried carefully, and an area of 2 to 3 inches at the wound painted with tincture of mercresin. The wound edges were grasped with splinter forceps, and the *epidermis* cut away for several mm. about the wound. This exposed the sand, rarely particles of sock, leather, rubber, concrete, etc., which could then easily be removed with the splinter forceps or be wiped away with a cotton applicator soaked in tincture of mercresin. The wound was not probed beyond ¼ inch, and this under direct vision. A dry dressing was applied, and *1,500 units of tetanus antitoxin* given. If the nail was larger than 10-penny the patient was instructed to rest one or two days; if a smaller nail he returned at once to work. Orders were to soak the foot in hot water for 30 min. when he reached home and to repeat h.s.

Patients with wounds larger than a 10-penny, or lacerated wounds, were given crutches and told to bear no weight on the affected foot for one or two days, and to report to the hospital on the day they returned to work for inspection of the wound. If any sign of increasing inflammation was present, elevation and rest of the affected limb and hot compresses were ordered.

Patients with minor wounds were instructed to return if any increased soreness was noted.

No prophylactic sulfonamide treatment was used locally or orally.

In this paper only the patients who came for treatment on the day of the injury were considered.

Soaking the foot in hot water brings an exudation of lymph into the affected areas. Leukocytes are probably mobilized by the local heat.

There were no deaths in this series; no tetanus or in any of the thousand nail wounds treated. Cavalry units were stationed at the site of the air station during the first world war so many of the nails probably carried tetanus bacilli. Disability per case averaged 0.6 day. Disability due to tetanus antitoxin has not been considered in this series.

1. 1. F. H. Bowen, Naval Reserve, New River, N. C., In *Jl. A. M. A.*, May 30th

ACUTE PORPHYRIA

IT IS as much the obligation of the family doctor to save his patients from operations they do not need, as to see that those with acute appendicitis and ruptured ectoptic pregnancy have surgical care promptly.

Porphyria is a condition any one of us may never see, or which he may see today or tomorrow.

Here are the essential points of an article[1] on this subject.

Gr. Porphuros=purple. Acute porphyria is a disease characterized by the sudden onset of acute abdominal cramps and obstipation which may disappear and then recur, after a variable period pro-

1. P. I. Hoagland, in Proc. Staff Meet. Mayo Clinic, May 6th

found psychic and neurologic disturbances. During the acute phase large amounts of prophyrins are excreted in the urine, giving it a dark burgundy color. The condition appears most often in the third to fifth decades of life, and affects 4 women to 1 man. The mortality is high.

A condition in which large amounts of porphyrins appear in the urine *in infancy and childhood* is congenital prophyria. Light-sensitivity of the skin leads to a chronic mutilating dermatitis.

Both diseases result from errors in the metabolism of the porphyrins.

Acute porphyria may give a history of the patient having taken sulfonal, trional, chloral, a barbiturate, lead or arsenic, or a sulfonamide. It is generally assumed that these substances merely *precipitate,* that they do not *cause* the disease state.

A low fever, leukocytosis as high as 20,000 and the abdominal symptoms cause about a third to be subjected to exploratory laparotomy, although the abdomen is usually soft. Jaundice and peculiar pigmentation of the skin are not unusual. Hypertension and tachycardia are typical; may go on to profound muscular weakness. Once neurologic changes appear the mortality rate is 75%. Death is by respiratory paralysis. Remissions and relapses may occur. Few patients have been known to survive more than five years after their initial attack.

The diagnosis is made by identifying uroporphyrin in the urine, which may be excreted in a colorless form. Exposure of colorless urine containing porphyrin to sunlight, especially after the addition of small amounts of an oxidizing agent and HCl, will usually turn the urine dark in a few hours. *In the majority of suspected cases the problem can be solved by this simple procedure.*

The treatment is expectant: keep the patient out of strong light, maintain nutrition; barbiturates, heavy metals, and sulfonamide compounds should be proscribed.

Whenever patients present puzzling acute abdominal pain, especially when psychic and neurologic symptoms are associated, acute porphyria should be borne in mind.

Abnormal amounts of *copro*porphyrin occur in the urine in many pathologic conditions but the presence of *uro*porphyrin is diagnostic of porphyria. Indicating the presence of uroporphyrin is red fluorescence of the urine in ultraviolet light, after removal of the ether-soluble porphyrins. Identification of the uroporphyrin then can be completed by spectroscopic examination.

FAMILIAL HEREDITARY EDEMA *(Milroy's disease)*—Fewer than 50 families with this hereditary syndrome have been reported.

SURGERY.

GEO. H. BUNCH, M. D., *Editor,* Columbia, S. C.

CURABILITY VERSUS CONTINENCE IN LOW COLON RESECTION FOR CANCER

IF THE GENERAL CONDITION of the patient permits, cancer of the colon before metastasis occurs may in most cases be cured by radical removal. When there is acute obstruction colostomy should be done preparatory to resection. Nearly 90% of the operative deaths from resection are from peritonitis which has resulted from fecal soiling at operation. To overcome the high mortality from peritonitis the Mikulicz exterioration procedure—leaving the growth outside the partially closed abdominal incision for removal after wound healing begins—was devised. Although there is now a decided trend toward primary resection, exteriorations is in suitable cases still generally used, notably by Lahey.

Safety of primary resection of the colon depends upon the ability of the surgeon to accomplish aseptic anastomosis. Mechanical gadgets for this purpose now on the market make possible, when due care is taken, an aseptic technic which has not heretofore been attainable by most surgeons. When resection has been done aseptically, postoperative mortality is not greater than after other abdominal operations of like magnitude and convalescence is in every way as satisfactory.

Primary resection with end-to-end anastomosis is the ideal treatment for cancer of the colon if it can be safely accomplished and if it is sufficiently radical to prevent recurrence. More than half the cancers of the colon occur in the sigmoid and the rectum. A growth two inches above the pelvic peritoneal reflexion may be removed by primary resection and end-to-end anastomosis done so that the highly desirable, but nonvital, sphincteric mechanism is preserved. In resection of the proximal colon enough intestine may readily be removed to insure a wide margin of safety in healthy tissue both above and below the growth. In the distal colon, however, when the growth is low, if wide excision is done there may not be enough of the lower segment left for anastomosis. Unfortunately, at operation the surgeon must rely entirely upon palpation of the intestine for determination of the extent of the growth. Because of the hazard of peritonitis from soiling he must deny himself the privilege of opening the intestine for accurate definition of the lesion by visualization. Early cancer of the rectosigmoid region is best diagnosed by proctoscopic examination. When such a favorable case is operated upon the surgeon may have serious difficulty in even recognizing by intestinal palpation an early growth that is not scirrhus, although he

has been told how many inches the lesion is above the anal outlet.

Authorities stress the necessity for wide excision of the lesion and lymphatics to prevent metastasis. None has warned of the danger of local recurrence resulting from incomplete removal of the lesion. The writer is convinced, after having two patients with local recurrence of cancer in this location in which end-to-end anastomosis had been done successfully, that permanent colostomy should have been done and the entire lower segment of intestine removed. With continuous intravenous administration of blood during the operation the entire procedure had best be done at no more than a single sitting. Aseptic anastomosis without wide excision of the growth is not effective as a cure for cancer. Cancer surgery, to be curative, must by radical. Sacrifice of sphincteric control is not too high a price to pay for life.

ORTHOPEDIC SURGERY

TREATMENT OF ARTHRITIS WITH VITAMIN D

THE CLINICIAN making this report is not advocating vitamin D as a single therapeutic agent for arthritis, but is pointing out the results in a series of patients observed over a period of years, who received no concurrent medication.[1]

Each case was made its own control by alternating periods of treatment with either no treatment, or with a placebo.

The distribution of these cases according to the diagnosis by type was: atrophic, 84; hypertrophic, 9; mixed, 5.

There were 22 males and 76 females in the series.

Twenty-eight patients had experienced some disability for six years or longer, while 70 were first examined at the Clinic within six years of onset.

There were 66 cases falling in the more severe groups which probably means that they did not come to the Clinic until the condition had progressed to a degree that compelled attention.

Evaluation of the end result of treatment:

Inconclusive	0
General condition, appetite, muscular strength and peripheral vasomotor disturbances improved some..	8
Decreased joint swelling; less pain	42
Joint swelling decreased markedly, increased mobility, markedly decreased pain	34
No exacerbation after six months to one year without treatment	14
	98

1. Irving E. Steck, Chicago, in *Ohio State Med. Jl.*, for May

All patients received a form of ergosterol activated by an electrical process and put up in capsules containing 50,000 units each* for periods of one to five years.

To these one might add (a) psychic suggestion induced by repeated reference to toxicity, and failure to differentiate this form true vitamin D toxication and (b) confusion of this condition with hypercalcemia and hypervitaminosis D.

Finally, it must be admitted that in view of the extensive use of vitamin D in the general population, a surprisingly small incidence of unquestionable vitamin D toxicity has been reported. There was no toxicity at any time among the 98 patients included in this report.

The result of treatment of 98 cases of arthritis with vitamin D is reported and a detailed analysis of the data is given.

Intoxication with vitamin D was not found in any case.

The therapeutic results are closely comparable with those previously reported from the same Clinic.

There is no claim that vitamin D is a specific cure for arthritis. Complete freedom from any recurrence of symptoms on cessation of treatment for long periods was found only in a small percentage of cases studied over a period of five years.

*The product used in this investigation was Ertron, and was supplied by Nutrition Research Laboratories, Chicago.

WHAT PROGRESS HAS BEEN MADE IN CANCER?

(L. W. Frank, Louisville, in *Ky. Med. Jl.*, May)

When one attempts to talk about improvements in the treatment of cancer so far as the actual surgical attack is concerned there has been no decided advance except for the treatment of cancer of the lung.

In the handling of gastrointestinal cancer some advance has been made. The better results, however, are in a large measure due to earlier diagnosis and the fact that more individuals are presenting themselves for treatment while they are still in an operable stage.

There is one other lesion in the treatment of which there has been quite an advance and that is Ewing's tumor. Extremities were formerly sacrificed by amputation in order to effect a cure, whereas we now know that this tumor can be cured by radiation alone.

RESUSCITATION OF THE NEWBORN BY ORAL GAUZE PACKING

(A. P. Hudgins, Charleston, W. Va., in *Med. Times*, May)

Placing and leaving an opened gauze sponge well back in the mouth and pharynx of the newborn is an important aid in removing the mucus from the mouth, throat and bronchi and in establishing prompt breathing by stimulation of the gag or coughing reflex.

Prevention of aspiration of fluid into the lungs can be accomplished even earlier than by the suction method; the gauze can be inserted into the mouth and down to the throat by the forefinger as soon as the head is delivered.

WHEN AN ELDERLY MAN has bizarre complaints, one should always think of the possibility of urinary retention, and resort to catheterization to prove the point.—F. H. Russ, of the Mayo Clinic.

PUBLIC HEALTH

N. Thomas Ennett, M.D., *Editor*, Greenville, N. C.

MILESTONES IN NORTH CAROLINA PUBLIC HEALTH

(Continued from last month)

1920—On January 1st, Dr. B. E. Washburn, who had had general direction of the coöperative county health work, was recalled by the International Health Board and detailed to take charge of the Board's interests in Jamaica. Dr. K. E. Miller, of the United States Public Health Service, who had been detailed in January, 1917, to organize a model county health department in Edgecombe County; and then, in 1919, to assist his brother, Mr. H. E. Miller, in organizing the work of the new Bureau of Engineering and Inspection, to which was assigned the duty of enforcing the statewide privy act, succeeded Dr. Washburn as director of the Bureau of County Health Work.

In January a coöperative effort with the United States Public Health Service and the International Health Board to demonstrate the possibilities and advantages of the eradication of malaria from certain towns and cities in the state was begun. The towns and cities chosen for this work were Goldsboro, Farmville, and Greenville, the budget for each municipality being respectively: Goldsboro, $13,670.98; Farmville, $5,000, Greenville, $9,000—making a total investment in this work of $27,670.98. Mr. A. W. Fuchs, Associate Sanitary Engineer, was detailed by the Service to have supervision of the work.

In the winter and spring of 1920 the North Carolina Landowners' Association, under the progressive leadership of Mr. W. A. McGirt, of Wilmington, undertook a very extensive educational campaign against malaria, which was carried on through the public schools of thirty-eight counties in eastern North Carolina.

In April the Interdepartmental Social Hygiene Board assigned to the State Board of Health several workers for making a study of certain vice conditions in North Carolina towns and cities and for taking such steps as were found expedient for decreasing prostitution.

In June arrangements were made with the United States Public Health Service and the American Social Hygiene Association for the development of an elaborate educational unit on sex hygiene and venereal diseases designed to reach rural meetings through the use of picture films and a portable truck.

During the year antityphoid vaccination campaign was continued.

The educational work of the State Board of Health during this year consisted of a 48,000 monthly edition of the State Board of Health *Bulletin* and the distribution of approximately 350,000 pieces of public health literature.

The funds available during this fiscal year amounted to $342,284.33, of which $176,152.61 was state appropriation and the remainder from outside sources.

The Appropriation for the State Laboratory of Hygiene for this year was $25,000.

(To be continued)

THERAPEUTICS

J. F. Nash, M. D., *Editor*, Saint Pauls, N. C.

RECOGNITION AND TREATMENT OF CURABLE DISEASES OF THE HEART

Heart disease does not carry the suggestion of impending death that it once did. It is now generally known that many patients having heart disease live to a ripe old age and die of some other disease condition.

A good article[1] along this line is abstracted.

Treatment in most diseases of the heart concerns itself not so much with cure as with measures to enable the patient to feel well; a large number are now completely curable. Some cardiac diseases well recognized for years are too often overlooked by the examining physician.

Myxedema and its heart are frequently overlooked. Some cases of congestive failure which do not respond to digitalis are of hypothyroid origin.

Alterations of the skin, the slow monotonous speech, the memory changes and various paresthesias of the extremeties are suggestive. The basal metabolic rate is usually minus 30% or lower, blood cholesterol values 250 to 400 mg. %. The heart is enlarged, the sounds muffled, often a systolic apical murmur; blood pressure usually low and the pulse slow.

When thyroid therapy is discontinued, the heart again enlarges. With adequate thyroid administration all signs and symptoms disappear.

Especially in myxedemas of long standing in the elderly the sudden acceleration of metabolism by treatment with thyroid extract may place too great

1. Maurice Snyder, Salina, Kans., in *Jl. Kansas Med. Soc.*, Jan.

a strain on the cardiovascular system and fatal cerebral and coronary accidents may occur.

The goitre heart is most commonly seen in patients over 40 years of age with already slightly damaged hearts. Oftentimes there is little evidence of hyperthyroidism, and it is recognized only when cases of tachycardia and irregularities of the pulse do not respond to digitalization in a patient with congestive failure. Extrasystoles are rather frequent. The b. m. r. is usually increased, not an uncommon finding in congestive failure from any cause. In an advanced case right-sided heart failure with enlarged liver, ascites and edema.

The treatment is removal of the thyroid gland after adequate preparation.

Beriberi and its heart result from thiamin (vitamin B_1) deficiency. The diagnosis depends chiefly on the dietary history. Cardiac symptoms without known cause in a patient with signs of other vitamin deficiencies, should lead one to suspect multiple deficiency disease ,and in all probability beriberi heart disease. Symptoms are dyspnea, palpitation, tachycardia, weakness, anorexia, some degree of peripheral neuritis and a sense or constriction in the mid-epigastric region. Increased pulse pressure; basal metabolism is usually below normal.

The response to thiamin parenterally in doses of 15 to 30 mgs. t. i. d. is dramatic. Give other vitamins if associated deficiencies exist. Beriberi may be superimposed, especially on congestive failure with anorexia and other gastrointestinal disturbances.

Chronic constrictive pericarditis occurs more commonly in children and young adults and nearly always follows an acute pericarditis in from a few weeks to several years.

In cases of patent ductus arteriosus there is a loud continuous murmur with systolic accentuation and palpable thrill over the pulmonary area; low diastolic and high pulse pressure are almost constant findings. Diagnosis is usually made by fluoroscopy. The response to ligation of the ductus is gratifying. A patent ductus plus infection should be recognized early, before vegetations start to scatter down the wall of the pulmonary artery, and before the invaded areas become too friable for successful ligation.

Fatal contusion of the heart may occur without apparent evidence of trauma to the chest wall or fracture of the sternum. Findings are chiefly those due to the sudden accumulation of blood in the nonelastic pericardial sac, and falling arterial pressure. The sounds are quiet and there may be demonstrable increase in the area of cardiac dullness. A paradoxical pulse should give one an immediate clue as to the nature of the circulatory disturbance.

As soon as recognized, the nonclotted blood should be aspirated to relieve the cardiac compression, and intravenous glucose solutions given while preparing for operation.

Suppurative pericarditis is often difficult to diagnose, may result from a blood-borne infection or from direct extension from pneumonia or empyema. It should be thought of in any case of obscure fever.

Obesity handicaps respiration and circulation. Reduction in weight should be carried out even though heart failure is not evident, gradually by a low caloric diet alone; thyroid extract may cause attacks of angina pectoris, coronary thrombosis and heart failure.

Anemia of long standing may cause heart disease. The hypochromic anemias respond best to iron and the macrocytic (pernicious) enemias to liver extract. A vitamin-rich diet should be used in addititon.

Tumors of the heart not due to metastatic infiltration may be successfully removed. They are difficult to diagnose.

ADVANCES IN TREATMENT OF MENINGITIS

In this article[1], Hoyne traces the history of the treatment of meningitis from the time when all varieties of meningitis were in the vast majority of cases fatal, to the treatment of the present day.

He believes that there have been three real advances in treatment in recent years. The first is the discontinuance of intrathecal therapy, with substitution of treatment by oral or intravenous routes. Next is the abandonment of the theory that frequent lumbar puncture is either necessary or beneficial. He recommends a single spinal puncture, and this only in cases in which it is needed for diagnostic purposes. The other great advance is the introduction of chemotherapy, because in most instances the suitable sulfa drug is sufficient for any form of meningitis that is amenable to treatment.

Tuberculosis meningitis remains the one form of bacterial meningitis for which we have not an adequate remedy.

1. A. L. Hoyne, *Journal of Pediatrics*, 19:778, 1941.

Magnesium sulphate is as effective in producing relaxation of the sphincter of Oddi oral as intraduodenal. Relaxation is not constant and is considerably less than the relaxation following the administration of amyl nitrite or ingestion of a fatty meal.—*Bergh & Layne.*

"In fractures of the pelvic bones the necessity of ascertaining a possible rupture of the bladder is of far greater importance than the treatment of fracture of the pelvis. An early recognition is imperative to save the patient."—Bogar.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

HOSPITAL POSTOPERATIVE CARE OF PATIENTS

During the period when patients who have undergone an operation are receiving little or no nourishment, other than that received in glucose solution given intravenously and perhaps a small amount of other liquid, it is often helpful to administer vitamins in concentrated form.

Thiamin chloride is often given hypodermically, most of the other vitamins orally. Concentrated liver extract for the purpose of stimulating the blood-forming mechanism of the body is often helpful and can be given intramuscularly.

In prolonged illness where the food is cut down to the minimum and the patient is able to take only a very little ordinary food for several days, it should be remembered that an avitaminosis may develop and complicate an already distressing situation.

While the best source of vitamins is foods taken in the ordinary way, yet it is advisable under many circumstances to administer such as we can hypodermically or in concentrated form orally.

In concentrated forms these will often be retained and absorbed when ordinary foods would neither be retained, digested nor assimilated.

The use of glucose and saline freely, especially in summer, and plasma and whole-blood transfusions are indicated in many cases, in which their free administration will overcome the acute distress following an operation and greatly hasten convalescence.

The extreme thirst, dry mouth and the general effects of dehydration of the postoperative period should not be allowed to occur. In a dehydrated patient the resistance is often very low and complications are more likely.

Keeping the mouth moist and frequent cleansing with an agreeable mouth wash is a great help; not, however, for any germicidal or antiseptic action of the mouth wash. Parotitis is not likely to develop except where the mouth remains dry for sometime.

Patients who are suffering from the menopausal syndrome can usually be given, with profit, small doses of some estrogenic hormone or of stilbestrol daily or e.o.d. p.r.n. to prevent the development or recurrence symptoms incident to the menopause.

The postoperative care of patients is a tremendous field in itself and is of vital importance to the patient and to a comfortable convalescence and rapid discovery.

THE CARE OF PATIENTS AFTER THEY RETURN HOME FOLLOWING A SURGICAL OPERATION

One of the greatest problems in surgery is that of the care of patients after they return home from the hospital following a surgical operation, especially after a pelvic repair or an abdominal section.

A great many patients feel that after they leave the hospital they should be well and that it is all right to eat almost anything and do about as they please. Unavoidable sequelae are usually negligible compared to the preventable troubles that occur when patients disregard instructions.

It has been our custom for many years to give each patient a carefully prepared letter of instructions or directions to follow on return home. These instructions are modified or elaborated according to individual requirements.

Verbal instructions are so often forgotten in the excitement and stir of getting ready to return home that it is not well to depend upon the patients remembering everything that you tell them. Where these instructions are written out it is far more satisfactory and more helpful to the patient.

Among the most troublesome developments after a patient returns home result from over-eating and constipation. Unusual exertion is another cause of trouble and should be proscribed. Trying to stay up all day is another thing that reacts badly upon the patient. When there is fatigue at the end of the day and sleep becomes impossible, nervousness increases and a sort of vicious circle follows. If this keeps up for several nights, the patient usually becomes nervous, dissatisfied and unhappy and this may be followed by all sorts of minor complications, the sum total of which may be so bad that a return trip to the hospital will be necessary.

In case of any complication of consequence, it is best to return the patient to the hospital. These things, of course, are distressing to the patient and give the doctor no end of concern.

Every one on returning home from a hospital should immediately be under the care of the home doctor who knows what was done and who should have been in the consultation which mapped out post-hospital treatment. If this plan is put into effect, little if any trouble is likely to develop and convalescence is made much easier and safer.

For one inclined to be apprehensive, sedatives and a mild hypnotic for a few days after returning home are often helpful to start a patient off to a good night's rest and to awake the next morning feeling rested and comfortable.

Too much company is another source of trouble. Well-meaning but uninformed friends advise many

things, and when these unorthodox remedies are tried they usually end in trouble. The very presence of a string of visitors, day after day, is harmful to most patients who have just undergone a major operation and should not be permitted. Almost complete isolation for a week or more for the more nervous patients is good routine.

Having patients return to the hospital once for a careful examination to determine the result obtained is valuable to patient, surgeon and hospital. Most of them can return in ten days to two weeks and by seeing them once a lot of future trouble may be prevented. It is often possible to ease the mind about something that is causing concern or worry.

Coöperation between the home doctor and the surgeon prevents the development of many undesirable conditions and circumstances and usually keeps the patient reassured about his progress and ultimate cure.

Every surgeon, every man practicing medicine and/or surgery, should keep in mind the fact that all the time, even while under the care of the specialist in or out of a hospital, the person under treatment is the patient of the family doctor; that the patient has been sent to the specialist for a short time and for a special job; and that in his contacts with patient and family doctor the surgeon should never assume an attitude of superior wisdom or greater importance. In the first place, the facts will not justify such assumption; in the second, by so doing, the surgeon fools nobody but himself.

FURTHER OBSERVATIONS ON THE TREATMENT OF VARICOSE VEINS OF THE LEG

It is necessary to know the cause of the varicosities, whether or not there has been a deep thrombo-phlebitis and the amount of obstruction to the deep venous system. From the lower extremities blood is returned principally by the deep venous system, between which and the long or great saphenous vein, are communicating veins. A thing sometimes overlooked is the fact that a patient may have had a deep thrombophlebitis with obstruction of the deep vein at some point in its course, and obliteration of the long or great saphenous vein might cause still further obstruction to the venous flow if nothing worse.

By disregarding the names of these various tests, remembering only the anatomy, physiology and pathology of the venous system of the leg, we can work out tests that will enable us to determine the pathology present and from this advise the proper treatment.

A test that is especially valuable is made by placing a para gum rubber bandage from the foot up to a point above the knee and having the patient walk around for a while. While the patient is walking around, the blood flows into the limb through the arterial system; and the superficial vein is compressed by the rubber bandage. If the deep veins are obstructed the leg will immediately become extremely painful and swelling will follow very rapidly. Only a very few minutes are required for the completion of this test.

If the deep veins are open and the flow through them is free, the application of such a bandage will give relief instead of distress.

Where the deep veins are obstructed, of course one must not obstruct the superficial veins. If only a segment of the deep vein is obstructed below the upper level of the tourniquet the blood may detour around the thrombosed vein and, as Heyerdale observes, may return to this vein on the proximal or body side of the obstruction. In such an instance obliteration of the superficial veins should not be done. Other treatment should be given.

A short while ago I examined a patient who had been wearing an elastic stocking for sometime, who insisted that while standing still it gave considerable relief for a short while but that if she wore the stocking for half an hour or so the limb would begin to swell, especially if she did very much walking. In this instance there had been no obliteration of any kind and it was plainly evident that the trouble was a deep venous obstruction. However, she did have superficial varicosities which carried the return flow of blood into the general system.

In the treatment of varicosities of the lower extremities where there is an unobstructed flow back from the dep venous system high ligation of the long or great saphenous vein is necessary, and at the same time it must be remembered that the small tributaries at the upper part of this vein must, also, be ligated to prevent a recurrence.

Retrograde injection to the lower part of the veins aids greatly in obtaining a cure.

The passage of a ureteral catheter down through the upper end of the lower part of the vein after a high ligation and resection is helpful in placing the sclerosing fluid evenly throughout the vein by injecting it as the catheter is being withdrawn.

The treatment of varicose veins should be undertaken only after a careful examination and an accurate diagnosis, and then the treatment should be carried out until the condition which exists has been relieved and the patient should be under observation for a considerable length of time afterwards.

Bedridden patients should not have their veins injected. It is important to keep patients ambulatory following the injection treatment of varicose veins.

DERMATOLOGY

J. Lamar Calloway, M.D., *Editor*, Durham, N. C.

THE MANAGEMENT OF PRURITUS

Generalized itching is a fairly common complaint of patients seen by the average physician and its causes are so numerous that successful treatment is possible only when the exciting cause is determined. Generalized itching may be classified into two general groups: first, the organic; and second, the functional.

Organic.—Dryness of the skin, perhaps the most common cause of pruritus in this classification, is a constitutional state made worse by bad heating provisions, too-frequent bathing, and the too-free use of soap. This is sometimes referred to as winter itch, bath pruritus, or asteatosis; and is usually fairly well controlled by infrequent bathing, the use of little or no soap and a superfatted soap. Generous applications of "cold cream", olive oil, or oily antipruritic lotions should be made after bathing, and repeated frequently, to keep the skin from becoming too dry. Scabies gives the history of generalized pruritus, worse when the patient is warm or after he has gone to bed, and can as a rule be diagnosed fairly easily; but in persons who bathe frequently the diagnosis may be difficult. Examination of the finger webs, wrists, genitalia and breasts for the presence of burrows or excoriated vesico-papules usually establishes the diagnosis or at any rate justifies a scabetic regimen to eliminate that possibility.

Pediculosis, chigger bites, and bed bug bites, although as a rule fairly localized in their distribution, may be generalized if the patient has not had good care.

The lymphoblastomas — leukemia, lymphosarcoma, Hodgkin's disease, and granuloma fungoides —may cause intense pruritus, and particularly in patients with general lymph-node enlargement. Careful bone-marrow and hemotologic studies, with biopsies, are indicated.

Urticaria due to foods, bacteria, bacterial foci, pollens, drugs, serum etc. produce characteristic lesions and require the usual investigation and treatment for urticaria.

Diabetes, jaundice, hypothyroidism, senile atrophic skin, uremia and gout may also be responsible for intense generalized pruritus.

Functional.—This type of itching is far more common than is generally recognized, and when all physical and laboratory findings are negative for an organic lesion the possibility of functional itching should be borne in mind. This type of itching may be a result of a simple emotional instability, or due to a true major psychosis. Although the tactful, sympathetic and patient physician may be able to solve the problem it oftentimes requires the help of a psychiatrist who is able to analyze and correct the complex emotional and nervous-tension factors responsible.

Acaraphobia, cancerphobia, syphilophobia are common in this type of itching.

Treatment

Treatment of a symptomatic nature is always necessary during the course of investigation but over-treatment may be injurious. In most conditions oily lotions are preferable to drying lotions, and colloid or starch baths preferable to soap-and-water baths. Patients should not expose themselves to extremes of cold or heat and after bathing the skin should be blotted dry rather than rubbed dry. Phenobarbital, one-half grain, t.i.d., is often very helpful. Calcium gluconate by mouth or intravenously plus sun baths or ultraviolet light is also beneficial. The following prescriptions for an oily lotion and for an antipruritic ointment are recommended.

℞

Phenol	2.4
Liquor carbonis detergens	12.0
Olive oil	120.0
Calamine lotion (N.F.)	120.0

Sig: Sop on p.r.n. for itching

℞

Menthol	0.3
Chloral hydrate	3.0
Ungt. aquae rosae	60.0

Sig: Apply locally for itching

PREVENT HEAT SICKNESSS

(L. S. Arling, Minneapolis, in *Minn. Med.*, May)

In most cases, the program of prevention of heat sickness ends with the use of sodium chloride tablets, plain or combined with sugar, which are provided to the workers in convenient dispensing containers. This is an essential part in its prophylaxis but the individuals who do their work in abnormally hot or humid environment and the entire population exposed to very hot weather must be educated to a 24-hour program of heat-sickness prevention.

Food should consist of an easily digested, high-carbohydrate, low-fat diet with adequate beverages—water, fresh fruit juices, milk, carbonated drinks, and possibly tea or coffee. Beer and ale in small quantities. Frequent small drinks are safer than a large amount at one time; ice-cold drinks must be sipped slowly. The large meal should come after the day's work; a light, easily-digested but nourishing meal before work and at lunch.

A cool shower or tub bath before going to work and repeated on completion of work does much to minimize the effects of a hot job or warm weather.

The use of salt tablets should be limited to 10 grains every two hours.

Nine per cent of all women committed to institutions for the mentally ill date their illness from a pregnancy. The psychoses appearing during or following pregnancy do not differ from the psychoses in non-pregnant. Any strain comparable to a pregnancy might precipitate the same mental difficulty.—*B. R. Hinson,* in *Jl. Okla. Med. Asso.*

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

IN MEMORIAM

Doctor Joseph Thomas Buxton

by

Dr. James K. Hall

The most thoughtful citizens of a quiet southern village could not have sensed, half a century ago, that the change in ownership of a furniture store there constituted the first step in the coming amongst them of modern medicine.

Samuel Buxton gave four years of his early manhood to the Confederacy on the field of battle, less many months spent as a prisoner of war. He emerged from that conflict a captain, in command of his regiment. Throughout the remainder of his busy life he carried on his body a great scar.

Samuel Buxton was studious and contemplative as well as active in business; and through his study of history he developed such admiration for the military genius of Napoleon that he made that soldier's name his own middle name. In 1895, at the height of his activity and success, a carbuncle on the back of his neck tragically terminated the life of that busy and useful citizen.

Within his fifty-four years he had acquired a practical education, he had been a valiant soldier, a successful merchant and a county and state official. Soon after Appomattox, he had married Elizabeth Peele, whose family name was old and honored in his native North Carolina, and his wife and the eight children, save one, survived him.

In the fall of 1891 Joseph Thomas Buxton, the second son of Samuel and Elizabeth, entered the freshman class of Wake Forest College. He must have been intellectually ahead of his years, for on December 12th of that year he observed the sixteenth anniversary of his birth. After that single academic year, impatient to be at the study of medicine, in the fall of 1892 he began the study of medicine in the University of North Carolina. With that introductory knowledge of medicine, the future surgeon entered the University of Pennsylvania in the fall of 1893. Four years later, when only a few months more than twenty-one years old, he was graduated from that, the oldest medical school in the United States.

He served interneships in the Presbyterian Hospital, and in old Blockley, in Philadelphia. He had probably acquainted himself, too, with some of the European Clinics. Then he must have wondered many times where he should locate for the practice of his profession. He was well prepared to do surgery, and in the South fifty years ago there were few surgeons, and infinitely fewer hospitals.

Does one wonder why the youngster, medically well trained, and ambitious, too, elected to make his home in a small town of Tidewater Virginia? A mighty battleship, fabricated in the ship-yard there, was launched at Newport News two weeks ago. But when the young doctor, Joseph Thomas Buxton, opened his medical office there near the beginning of the year 1899, Newport News was scarcely more than a village.

One of his paternal uncles had become interested in the furniture store taken over there in 1894 by his father, and that uncle had been living at Newport News for three or four years. And so also was the young physician's brother, Samuel R. Buxton, a recent professional arrival in the village. He has been a busy lawyer there since late in 1898. But if the death of his father had not disrupted his educational plans, the distinguished lawyer feels certain that he would eventually have occupied a chair of Latin or of Greek, or of both, for he is still fond of those ancient languages. The assumption by him of the management of the store for a few years after his father's death, and immediately after his graduation from Wake Forest, gave him experience in business and resulted in his study of the law, instead of continued indulgence in the classics. Samuel R. Buxton reached Newport News with his license to practise law only a month or so before his brother came there with his diploma in medicine.

Their paternal uncle was already a successful merchant in Newport News, as he and their father had been in Jackson, North Carolina, where they were born and reared. The lawyer and the physician may have been endowed with some prophetic sense that told them what Newport News might become—with their help.

In midsummer 1899, only a few months after he had selected Newport News as his home, Dr. Buxton and Miss Helen von Lehn, of New Jersey, were married. During his interneship days in old Blockley she was a student in the Training School for Nurses.

When Dr. Buxton came with youth and good medical training and enthusiasm to Newport News, there was no hospital in the little town. He had been accustomed to well-appointed operating rooms, assistants and trained nurses. He felt that his patients should have hospital care. In 1906 he built and equipped the first hospital in Newport News. He expected to live his medical life in it and to manage it, and he named the hospital for his mother, Elizabeth Buxton. At first the little hospital provided only fifteen beds, but within a few years an addition doubled its capacity; a little later it was again doubled in size; now it provides for more than a hundred patients.

Dr. Buxton would allow nothing to stay him in keeping his hospital up to the needs of the community—in size, in equipment, in assistants and in nursing facilities. For the first few years Dr. Buxton himself constituted the medical staff. His feeling of responsibility for the care of his patients was such that he almost lived in his hospital. It was his life. His patients' trust in him had caused them to come to him rather than to the hospital. Eventually a medical staff was organized. An all-time pathologist was an early and a distinctive addition to the staff. X-ray equipment was installed, and Dr. Buxton was one of the first physicians in Virginia to make use of radium. A physical therapy department was added years ago.

Even though Dr. Buxton had had a gastro-enterostomy at the hands of Dr. G. W. Crile in 1924, and in spite of prolonged care in the Adirondacks on account of active pulmonary tuberculosis in 1928, and though the economic depression hung like a pall over the country after 1929, Dr. Buxton was undismayed. In 1932 an adjoining splendid and spacious clinical house was erected. But the feature of the building in which Dr. Buxton took most pride was the library—a large and attractive room, filled with bound medical journals and other riches of medical literature. There he spent what time he could spare from his other duties. He read omnivorously. He was blessed with a retentive and well-ordered memory. That endowment made possible for him a boundless store of knowledge, medical and general.

What characterized this surgeon especially? Work. That one word epitomized his life. But his unceasing industry was guided and sustained and made fruitful by innate honesty, quiet courage, devotion to duty, and an unwearied search after truth. He loved his fellow-mortals, of all kinds, but he would never forgive them for triflingness or for want of honesty.

He had no diversions and no hobbies. The only change in his daily routine must be in more work or in different work. With him life and labour were synonymous. Yet he seemed never to be hurried.

Dr. Buxton had little inclination to make use of his pen. Most of his contributions to medical literature were made in case reports. Most of his work was with matter, and he rearranged much disordered matter skillfully and successfully. He was a quiet, modest, retiring man. He did not make himself objective by exhibition of himself or by the vocalization of his opinions. He declared himself by his utilization of professional knowledge and by his display of skill in the sick room and at the operating table. He learnt much by listening. He attended medical meetings and he carried back home with him most of the knowledge made available to him by the experience of his fellow-physicians.

He was not only a busy surgeon and an efficient hospital administrator, but he was an educator, too. Throughout the years the graduates of his training school have continued to make their contributions to our civilization. And an internship in the Elizabeth Buxton Hospital constituted that final step in preparation for the practice of medicine that fitted the young physician to go confident of himself out into the world. The teacher always lives on and on through his students. When the first World War came Newport News was one of the busiest places in our country. Dr. Buxton proffered himself to the Army, and he returned from duty a captain.

Dr. Buxton was a kindly man, and companionable, but he did not court familiarity. He lived wholesomely and openly and honestly. For almost half a century he was highly pedestalized in a community that knew him well. His home life was happy. His wife went to her grave in 1938. The five children survive him and do honour to their parentage. One of the two daughters, a graduate nurse, is now a matron. The other daughter devotes her days to the hospital. A son, graduate of the Naval Academy, and a Lieutenant Commander, may be now on the high seas. Another son, a lawyer, is likewise in his country's service. The youngest of the trio of sons, Russell von Lehn, had already become a busy and skillful surgeon before the Boatman's call came to his father.

The life of Dr. Buxton reflected credit upon his native North Carolina, upon the state of his adoption, upon the schools in which he was educated and upon the profession of medicine. His friend, and his near neighbor for half a century, the much beloved Dr. Clarence Porter Jones, declares that he lived easily and congenially with people, that he detested show and hypocrisy and that he reverenced truth and appreciated simplicity.

Mrs. R. M. Maddrey, of Northampton County, North Carolina, who knew well the blood and background of our former colleague, says that during the last three years of his life he exhibited a degree of patience, stoicism and tolerance for suffering that constituted a credit to him and to mankind. She is the mother of men and she knows them. One of her sons is a physician at Roanoke Rapids and one is the mayor of Weldon.

When election day came in 1940 Dr. Buxton was a rolling-chair invalid. But in an automobile he was taken as near as possible to the ballot box, and from the car he voted his convictions in the national election. Within a few minutes he became unconscious, and shortly afterwards he was dead. But how splendidly he had lived during a half century spent in ministering to the sick! Whether he may still be in possession of those senses that

enable him to know that we attempt here to make our estimate of him and to pay our tribute to his character and to his deeds done in the days he spent amongst us, we do not know. But we know that, wherever he may be, and with whomsoever he may have companionship, they must sense that a man has come amongst them.

Doctor John Wyatt Davis, Senior

by

Dr. R. M. Taliaferro

"In the midst of life we are in death"

Ever and anon this melancholy truth is borne in upon us. Today, we of the Tri-State Medical Association, in the midst of life, pause to pay tribute to the character and memory of an honorary member, who on February 27th, 1941 passed to Life Eternal, Dr. John Wyatt Davis, Sr.

Doctor Davis was born at Richmond, Virginia June 2nd, 1876. He received his preliminary education in the Richmond Public Schools, studied medicine in his native city at the University College of Medicine and passed the Virginia State Board of Medical Examiners on July 6th, 1899.

For a while he was Ambulance Surgeon for the Richmond Alms House Hospital and later was surgeon for the Gaton Coal Mines.

In 1902 he removed to Rustburg, Virginia, where he remained about four years. While there, he met Miss Margaret Louise Rode, whom he married June 12th, 1904.

Dr. Davis came to Lynchburg in 1906, where by faithful industry he established himself and built up a large private practice.

When the United States entered the first World War, he enlisted in the Navy—was sent first to St. Helena Training Station, and later assigned to the Atlantic Transport Service. In 1919 he was honorably discharged from the Navy, and the following year went as a Medical Officer with the Second Brigade of Marines to the West Indies. In 1922 he returned to Lynchburg and devoted the remaining years of his life to the private practice of medicine.

Dr. Davis held memberships in many medical organizations and societies. In 1905 he was appointed, by the Governor of Virginia, as a Delegate to the International Congress on Tuberculosis. Shortly after his coming to Rustburg he was appointed Coroner for Campbell County, which position he retained for nearly a quarter of a century. He was relieved of this position only when his offices were incorporated into the expanding city limits of Lynchburg, and the Coroner is required to have his offices in the county.

In 1935 he spent some time studying in the University of Vienna and had planned to return there in 1940, but the European conflict at that time caused him to change those plans.

He held a Life Membership with the Foundation Fund of the InterState Post Graduate Medical Association of Vienna. He was also a member of the Military Surgeons of the United States, the American Medical Assocaition, the Southern Medical Association, the South Piedmont Medical Society, the Virginia Medical Society and the Lynchburg Academy of Medicine.

He served one term as President of the Lynchburg Academy of Medicine and two terms as President of the Staff of Marshall Lodge Memorial Hospital, Lynchburg, both of which profited by his wise and faithful administration.

He was known amongst us for his diligent attention to his work, his unfailing courtesy and his personal charm, expressed in the manner of a typical Virginia gentleman. Wholly without ostentation he gave generously of his time and often of his purse to the sick and needy.

Doctor Robert Randolph Jones, Junior

by

Dr. Clarence E. Gardner, Jr.

Suddenly, at the hand of a patient whom he had tried to serve, Dr. Robert Randolph Jones, Jr., met his death on the evening of November 18th, 1941. Thus, at the age of 39, with a brilliant future before him, abruptly ended the career of one of the country's finest young surgeons.

Doctor Jones had been a member of the Surgical Department of the Duke Hospital since its opening in 1930 and since 1934 had been Assistant Professor of Surgery in the Duke University School of Medicine. Although active in all branches of general surgery, his special interest lay in plastic surgery in which he was fast gaining a national reputation.

His sympathetic heart, his jovial disposition and his untiring effort to help anyone who cared to lay his problems before him endeared him to all who knew him. His students looked upon him with affection that could only be engendered by the deepest confidence and respect. His patients worshipped him for the gentle, painstaking and thorough care with which he ministered to them. His colleagues loved him for his genial good will, his steadfast honesty and loyalty, his wholesome philosophy and Christian spirit, his unselfish devotion to his profession, and for the judgment and skill with which he practiced his art. To all who knew him, his sudden and tragic end came as a stunning blow that can be healed only by the passing of time.

Doctor Jones was born in Newport News, Virginia, on October 17th, 1902, the son of Robert Randolph and Sally Orgain Blackwell Jones. He received his early education in the public schools of Petersburg, Virginia and El Paso, Texas. In 1920 he entered Davidson College from which he grad-

uated in 1924. While in college he became a member of Pi Kappa Alpha social fraternity. In his senior year, he was president of his class and was also elected to membership in Phi Beta Kappa honorary scholastic fraternity.

In 1924 Doctor Jones entered the Johns Hopkins School of Medicine from which he graduated in 1928. During his senior year, he was elected to Alpha Omega Alpha honorary medical scholastic fraternity. As a medical student he was initiated into the Alpha Kappa Kappa medical fraternity.

He served as a house officer in the Strong Memorial Hospital, Rochester, New York, 1928-1929, and in the Johns Hopkins Hospital, 1929-1930. From 1930 to 1932 he was assistant resident in Surgery and from 1932 to 1933 he was resident in surgery at the Duke Hospital. From 1933 to 1934 he was instructor in surgery and since 1934 he had been assistant professor of surgery in the Duke University School of Medicine.

He was a member of his county and state medical societies, American Medical Association, of the Tri-State Medical Association and of the American College of Surgeons, and had been certified by the American Board of Surgery. Since 1939 he had been educational director for North Carolina of the Women's Field Army of the American Society for the Control of Cancer.

In 1929 Doctor Jones married Virginia Murray. She, one son, Randolph, III, aged 7, his father, mother, and two brothers, John B. Jones, of El Paso, Texas, and Dr. Thomas T. Jones, of Durham survive.

Doctor Charles DeWitt Colby

by

Dr. Charles C. Orr

Dr. Charles DeWitt Colby died September 23d, 1941. He was born in Jackson, Michigan, October 23d, 1865, graduated in medicine from the University of Michigan in 1892, and for his ability and distinguished record as a student he was made chief of staff of the University Nose and Throat Clinic. In 1898 he enlisted and served as assistant surgeon to the 31st Michigan Volunteer Infantry in the Spanish American War. He saw service at Chickamauga Camp, in Puerto Rica, and in Cuba. When he was mustered out with his regiment in June 1899 he had been promoted to the rank of Major Surgeon, and by his Commanding General was given a Special Order Citation for his capable and valuable service to the army.

He afterwards took special training in the Army Medical School, from which he was graduated in 1905. Soon afterwards he came to the mountains of Western North Carolina, stopping at one of its small towns. Dr. Colby was a great lover of the outdoors and it was this longing for the open that led him to spend much time roaming the hills and valleys—making a special study and collection of minerals—and at the same time making friends and administering to the sick of the mountain people who loved him for his friendship, for his medical skill, and for his understanding insight into their lives.

In 1911 on a visit to Asheville he met by accident his old friend and classmate at the University of Michigan, Dr. W. L. Dunn. Soon afterward he became associated with Dr. Dunn in the diagnosis and treatment of tuberculosis, in which specialty he became proficient and widely known as an authority. He was an untiring worker, often going far into the night, forgetful of self and his own welfare, giving his time and labor for the sake of his patients and their comfort. He was a student—widely read, and keenly alert to the progress and advancement of medical science.

Soon after coming to Asheville he joined the local Medical Society, presenting papers and taking part in the discussions. He was a regular attendant often not missing a single meeting during the year. He was a member of the North Carolina Medical Society, the American Medical Association, the Southern Medical Association, the National Tuberculosis Association and the Tri-State Medical Association. While receptive to the new methods of diagnosis and treatment in medicine he never ceased to follow the well tried and proven paths of the old school. He recognized some of the advantages of socialized medicine but was an ardent advocate of the family physician and the part played by him in the home and in organized society.

Dr. Colby was buried in Arlington National Cemetery September 26th, 1941 with full military honors. He was a good physician, a good soldier. We honor and respect his memory for his services to his fellowman, and for his loyalty to his country.

(To Be Continued)

RADIUM TREATMENT OF POSTOPERATIVE PAROTITIS

(R. E. Fricke, in *Proc. Staff Meetings Mayo Clinic*, Mar. 4th)

Acute parotitis may occur after any major surgical procedure. The staphylococcus is the usual offending organism. The prevailing view is that the organisms ascend Stensen's duct from the mouth.

Before the days of irradiation, treatment consisted mainly of the application of poultices, the application of leeches which was mentioned with respect by Osler, and incision and drainage when the abscess became large.

For several years we have been employing radium in 60% of the cases, immediately, at the bedside. A small suberythema dose is sufficient in most cases to abort the infection. Oral hygiene or the application of warm or cold compresses can be resumed following the irradiation treatment. We remove the heavy lead filtration so that the blocks used in treatment cause less discomfort. Two applications usually suffice.

SOUTHERN MEDICINE & SURGERY

Official Organ

JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

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SPECIAL CARE FOR THE AGING

THE formation of the American Geriatrics Society at the recent meeting of the American Medical Association is a response to the need for special study and care of the rapidly increasing number of the old in our population, and to developments encouraging the belief that the involutionary changes which constitute what we know as old age may be materially deferred and man's usefulness and happiness prolonged.

Hitherto, age has been neglected by medicine; the old the only group for which special study and special care was not provided. The old did not constitute a large percentage of our population, and there prevailed a spirit of defeatism as to doing very much to prolong their lives or even to add much of zest and happiness to their last few years.

Now, that urology has practically robbed obstructive prostatism of its terrors, and medicine has done the same as to pneumonia, the outlook for this group has been so brightened as to stimulate the belief that heart disease, cancer and mental deterioration may be prevented, deferred or ameliorated.

Our Government, from precinct to Washington, is run by aging men, men past their prime. The news has just been published that an Appellate Court has rendered a decision against the American Medical Association and that now only the United States Supreme Court can save us from conviction of violating the Anti-Trust laws, and most likely imposition of a heavy fine would be only a small part of the disaster. If we doctors lose this case, we are estopped from managing our own affairs, from carrying on the practice of our profession after the ideals which have commanded the respect and admiration of the world for 2500 years; and the country is placed in peril of having, in the not distant future, every doctor of medicine a political hireling, dependent on some party boss for appointment to, and retention in, his job of ministering to the sick.

With few exceptions, our courts are made up of old men, many of them with the vagaries and infirmities of their period of life.

For our very existence as a profession, it is well that the American Geriatrics Society has come into existence; for the study and care of the physical and mental processes of the aging.

A news note is carried on page 370 of this issue.

THE PHYSIOLOGY OF WORK

DAILY doctors are being urged to get into the service of the armed forces of our country. There is every evidence that the general response is patriotic and unselfish.

The Government would do well to consult medical men on important matters about which we know more than any other men.

Certainly an expert in physiology knows more than a lawyer, an economist, a professional politician, or a labor union official about what is the number of hours a man should be at his job each week to produce most and of best quality, without injury to his health.

One of the most eminent physiologists[1] of the world has written words which should cause our authorities at Washington to increase the number of hours in the work-week by 40% without an hour's delay.

Most of the labor performed in the modern factory and office is so far from the capacity of the workers that after the day's work is done in the factory the worker spends energy at a fast rate in gardening, ball games, or dancing.

Almost anything the management does that attracts the interest of the workers or indicates interest in their welfare improves productivity.

Recently it was deconstrated that the output of a group of workers in a shoe factory who ate the ordinary three meals a day was materially increased by providing a forenoon and an afternoon lunch of a glass of milk and a piece of cake.

In another experiment over a period of five years the only significant finding was that the output steadily increased during the period of any experiment. As a control, when, with the operators' consent, a return was made to the original conditions of work, with no rest pauses, no special lunches and a full-length working week, the daily and weekly output rose to a higher point than ever before. It was found that when the light was increased the output increased, because the workers believed *that they were expected to produce more,* and when the light was decreased the output was decreased for the same reason. When a mock change in light bulbs was made, the workers commented favorably on the imagined increase in illumination and produced more.

A rest pause is known to increase feeling tone, but there is no strict relationship between feeling tone and output after a rest pause in either muscular or mental work; in the factory the attitude of the worker toward both the task and the rest pause is very important.

The British Government has set the week's work at 48 hours for women, and for the majority of men from 54 to 60 hours. On January 1st, 1940, the German Government published a new decree, stating that the principle of the eight-hour day would be observed and that nowhere could the working hours be extended *beyond 12 hours.*

British experience has shown 56 hours a week to be the optimum standard for men.

We were told when the 40-hour law was being urged that the object was to spread the available short supply of jobs among the too-great number of workmen. Everybody knows that 40 hours is no week's work, that any healthy man will produce much more and be healthier, better satisfied, happier—better in every way—working many more hours each week.

One does not have to be a New Deal "economist" to know that if those who have been building ships, making guns, planes and munitions, had been working 50 hours we would be a whole lot further along toward winning this war, and that a whole lot of lives that will be lost would have been saved.

Better late than never.

Let's have the 56 hour week, all along the line, *and let's have it this week.*

1. A. C. Ivy, Northwestern Univ., in *The Diplomate,* April

SOME PUZZLING FINDINGS AS TO TUBERCULOSIS AND CARDIO-VASCULAR DISEASE

A SURVEY made recently by two public health officials[1] disclosed conditions difficult of explanation, some of them contradictory of current ideas accepted by most of us.

It is of great interest to know that these studies are to be pursued more exhaustively. The results are eagerly anticipated.

Who would have thought of the *Land of the Sky* as an area of high mortality from tuberculosis? Or that not nearly so many die of the disease in Tidewater Alabama as in the mountainous portion of that state?

The Appalachian region of the eastern U. S. is an area of high mortality from tuberculosis and the mortality rates decline both north and south of this area of high mortality. In Alabama as you proceed south from the northern boundary the mortality declines county by county.

Studies of household associates suggests that tuberculosis tends to spread less in the households of a sputum-positive case of tuberculosis in south Alabama than in households in Tennessee.

Iowa has the lowest reported mortality from tuberculosis of any state. In terms of the three-year average annual death rate (resident deaths) for the years 1938 to 1940 is as follows:

Under 10 per 100,000	18 counties
11-20 per 100,000	61 counties
21 and over per 100,000	20 counties

No apparent reason was found for this variation in death rates by counties within the state.

X-ray results obtained in the case-finding program suggests that in Iowa a considerable amount of pulmonary calcification occurs. The importance of determining the relation of pulmonary calcification to tuberculosis or to other conditions, as ascariasis etc., is not to be under-estimated. This pulmonary calcification is commonly called childhood-type tuberculosis and there is now evidence that *many of these pulmonary calcifications found in children and adults may be unrelated to tuberculosis.*

The state of Iowa's low death rate from tuberculosis is difficult to explain. In that state there appears to be an unusually high rate of pulmonary calcification.

All associated in the households studied are to be x-rayed and tuberculin-tested. Detailed household histories will be obtained. Stool samples will be obtained from members and studied for parasites. Soil samples will be obtained adjacent to the house and studied for parasites. The families will be asked to coöperate after permission to study the family has been given by the family physician. All reports on individuals will be confidential and sent to the family physician designated.

Studies[2] in hypertensive states establish some facts which are hard to reconcile with each other.

Negroes have more hypertension than white persons; they have less coronary disease.

Coronary disease is four to six times more common among men than women. In diabetes the blood cholesterol is usually at a higher than normal level. Women develop arteriosclerotic changes later in life than men and present a milder form. The coronary vessels calcify in 50% of persons above 60. Among the rural population, sclerotic changes develop later and to a mild degree. The well-to-do classes tend to develop arteriosclerotic changes earlier. In mental workers the aorta and not the cerebral vessels are most liable to be attacked.

Whatever the cause, atherosclerosis of the vascular system is certainly a form of tissue degeneration. Deposition of calcium in injured tissue is probably a protective mechanism to safeguard the strength of these tissues. The deposition of cholesterol, however, in early atherosclerosis is not protective and may lay the foundation for ultimate disaster. Some students of the subject believe that with the addition of food rich in calcium and protective vitamins, the years of active life might be increased 10%. Sir Thomas Lewis maintains that it is the repeated constrictions, the result of repeated stresses, that eventually traumatize the coronary vessels and produce occlusive changes. Additional factors that suggest themselves as significant in the increase of coronary disease include the aging of the population, the effect of the motor car upon former habits of walking and the generally lessened physical activity of executive, professional and clerical groups, the increased use of tobacco, the greater prevalence of the anxiety state, and the increased incidence of overweight. Tobacco is known to produce vasoconstriction in the peripheral vessels and there is reason to believe that it may have similar action on the coronary vessels.

Accumulating evidence indicates that certain of the atherosclerotic changes occurring in coronary vessels of middle-aged subjects may not be the result of a progressive deterioration, but may be an actual acquired disease of the arteries, influenced by metabolic, toxic and pressure factors. Of diabetic patients 85% developed atherosclerotic changes in five years on the high-fat regimen that was in vogue during the previous decade, but with the low-fat, higher-carbohydrate regimen now prevalent only 28% developed demonstrable arterial changes over a five-year period. Potassium iodide, as well as thyroid, will prevent the development of hypercholesterolemia.

The approach to the solution of the coronary problem is predicated upon principles of well-balanced living with sufficient physical activity and with emphasis on moderation, mental equanimity and sensible conservation of energy through the middle and later decades of life.

The adoption of a more tranquil and protective philosophy of life might even serve to help neutralize the influence of an unfavorable heredity or a hyperreacting temperament, thus offering a reasonable hope of postponement, if not prevention, of many of the tragic sequelae of coronary disease encountered in the world of today.

The third[3] of the series of studies here commented on reveals nothing very unorthodox; but is informative on conditions commonly encountered.

Over a 14-year period 4,500 patients were seen in a heart clinic; of these 1,500 were between 30 and 55 years of age, which fall into four main groups:

1. the degenerative heart diseases
   a) arteriosclerotic hypertensive
   b) coronary artery disease
2. rheumatic heart disease
3. syphilitic heart disease
4. no organic heart disease

Of this middle-age group of 1500 cases, 350 were syphilitic, 300 degenerative, and 150 rheumatic heart patients. Seven hundred had no demonstrable organic heart involvement. This latter group consisted of patients sent to us with symptoms referable to the cardiovascular system, but on examination had no demonstrable organic heart disease. Some having edema of the ankles were

merely obese or had varicose veins. Others complained of dyspnea. These had mediastinal tumors, emphysema, chronic bronchitis, or bronchial asthma. Others who complained of precordial pains, had massive foci of infection, or syphilis without cardiovascular disease. Still others complained of palpitation or tachycardia, and in many of these, neurocirculatory asthenia or hyperthyroidism was the basis. The removal of the causative factor in most instances resulted in great improvements of these symptoms.

The use of the electrocardiogram and the x-ray in differentiating the organic from the non-organic heart conditions was indispensable. Fluoroscopy in particular, was of great assistance. Various changes in the cardiac silhouette were easily detected.

The degenerative group consisted of the usual premature senescent types. The incidence of frank coronary-artery disease was small as compared to that in private practice.

Rheumatic heart disease is a disease essentially of unskilled workers. The number was small, a great number probably died before reaching middle age. It is imperative for the private physician, when treating a young heart patient, to make vocational guidance a major aspect of his cardiac therapy. The laity must become acquainted with the fact that rheumatic heart disease in a young person becomes a disabling condition in middle life.

Those with syphilitic cardiovascular disease 14 years ago were not given intravenous therapy. Treatment was started on a series of patients having syphilis with heart involvements. These patients were first given iodides and injections of bismuth, then small doses of neoarsphenamine by vein, and in the last two years we have used mepharsen. Cardiovascular involvement is no contraindication for intravenous therapy in syphilitic patients.

The articles quoted from deal with conditions of great practical concern. Each of them is deserving of careful study. Each is a correction of cocksureness.

1. Olson, B. J., U.S.P.H.S. & McCarthy, C. K., Iowa State Bd. Health, in *Ji. Iowa State Med. Soc.*
2. Falk, O. P. J., St. Louis, in *Ji. Mo. State Med. Assn.*, June 3. Schwartz, B., & Schlemmer, F., Cincinnati, in *Cin. Ji. of Med.*, June.

THE TREATMENT OF ALCOHOL ADDICTION

THE NUMBER of treatments touted for alcohol addiction testifies that none of them is often effective.

Most doctors who have to see after these patients before and after they have been given special treatments will recognize the truth of what two Pacific Coast observers[1] have to say.

The apparent reticence with which the English speaking psychiatrists have presented statistical data concerning the efficacy of treatment is very striking. With the exception of the statistics presented by Fleming and the unsatisfactory data of Seliger, we are unable to form any sort of opinion from an examination of the literature alone, as to the value of conventional psychotherapy in the treatment of alcoholism in this country or in England. If the only available data (those of Fleming) are considered representative of the general results, it must be assumed that conventional psychotherapy yields disappointing results considering the time and expense involved. A great number of statistical surveys have been presented by authors on the Continent.

In the opinion of the reviewers, alcoholic patients designated as improved are either in the process of total relapse at the time the survey was conducted or, more probably, were not alcoholic to start with. The lack of any satisfactory criterion between heavy (but normal) and pathological drinking would render the latter condition most susceptible to realization. It might be argued that in many cases the psychotherapeutic procedure had made it possible for the patient to resume normal drinking habits. If so, the goal of psychotherapy should be that of controlled drinking rather than total abstinence, for the former intent would certainly remove one of the major objections of the patient to accepting therapy.

It is rather surprising that from data which must be considered as reliable, Hare reports 60% of success with a comparatively simple atropine-strychnine routine; Durfee assumes (no statistical data) 75% success under a highly technical plan extending over a year's time; religious appeal claims 50% of cures; conventional psychotherapy 15 to 60%; conditioning techniques are efficacious in 65% of all cases; and, according to some views, the most scientific method, psychoanalysis, makes about the same ratio of cures.

This confirms the statement of Fleming that "practically every form of therapeutic approach has been successful—all have their coterie of enthusiastic advocates, all are fanatically intolerant of any approach but their own and doubtless all may have a place in a rational therapy of chronic alcoholism."

It would seem advantageous to expose the alcoholic first to the well-tested methods of therapy that involve the expenditure of the least time, effort and expense, and which are most readily adaptable to treatment of such patients in wholesale fashion; and to curb an over-enthusiastic reception of any new therapeutic claim until it has

1. W. L. Voegtlin & Frederick Lemere, Seattle, in *Quar. Ji. of Studies on Alcohol*, Mar.

been subjected to the test of time.

The ineffectiveness of punitive methods of therapy should be noted. The necessity for a more efficient method for distinguishing between the "hard normal" drinker and the alcoholic, as well as a uniform criterion of cure, is obvious.

THE HEADACHES OF BRAIN TUMOR

All of us have patients to develop brain tumors. Probably many of us have patients right now with brain tumors that we have not recognized. It is well for us all to be frequently reminded of the fact that brain tumors are not uncommon, and that we should think of them in arriving at a diagnosis of any case characterized by headaches, disturbances of visions or motor disturbances of uncommon types; and particularly when epileptiform seizures occur for the first time after the patient reaches adulthood.

Brain tumor has been allowed to get on to the stage at which it could not be removed completely, under the diagnosis of heat-stroke, because the patient had his first attack while working in the sun on a hot day.

Not all brain tumors can be removed entirely when seen early; but a great number of them can.

A group of New Yorkers[1] offer help in recognizing the headache of brain tumor and in locating the tumor.

The headache of brain tumor approximately overlies the tumor in one-third of all patients.

In the absence of papilledema in two-thirds of such cases the headache immediately overlies or is near the tumor and in all when unilateral it is on the same side as the tumor.

Headache is almost always present with posterior fossa tumor, almost always over the back of the head; may be absent with any of the common types of supratentorial tumor.

Headache is usually the first symptom of posterior fossa tumor except with cerebello-pontile angle tumors; is the first symptom of one-third of supratentorial tumors.

The headache of cerebellopontile angle tumors is frequently, and sometimes solely, post-auricular.

Headache from supratentorial tumors is rarely in the back of the head, unless with papilledema, When such tumors cause headache in the back of the head, headache in the front of the head is usually also present.

Brain tumor headache is commonly intermittent, when continuous its value in localization is greatly enhanced.

Brain tumor headache is produced by traction upon intracranial pain-sensitive structures, chiefly the large arteries, veins and venous sinuses, and certain cranial nerves. There are two types of traction which operate singly or in combination—local traction by the tumor-mass upon adjacent structures; and distant traction by extensive displacement of the brain, directly by the tumor or indirectly by ventricular obstruction.

As an aid in the localization of brain tumor, the value of headache is limited by two facts—the headache may be remote from the site of its production, and the site of production of the headache may be remote from the tumor.

In spite of these limitations, when it is interpreted in terms of known principles of intracranial pain production and pain reference, the headache of brain tumor may aid significantly in the diagnosis and localization of the lesion.

1. E. C. Kunkle, et al, New York City, in *Bul. N. Y. Academ. of Med.*, June

BLEEDING PEPTIC ULCER

(N. W. Chaikin & Oscar Tannenbaum, New York in *Amer. Jl. Dig. Dis.*, May)

There have been admitted to the wards of the Metropolitan Hospital of New York City, 744 cases of peptic ulcer—gastric, duodenal and marginal. Hemorrhage occurred in 101 cases with 114 admissions. In 86 cases the treatment was only medical, in 15 cases surgical. The surgical cases will not be discussed here. Mild cases which presented simply occult blood in the stools not included.

Our routine treatment of bleeding peptic ulcer is now. 1) small frequent transfusions and sedatives in the presence of shock; 2) the immediate institution of the Meulengracht diet; 3) the giving of parenteral fluids in the presence of dehydration, and 4) the administration of alkalis, antispasmodics, iron and vitamins.

The peak of the incidence of bleeding occurred in the third and fourth decades.

There were 56 cases of bleeding ulcer in which the patient was treated by supportive measures and starvation with a mortality of 6.9%. In the cases of 30 patients receiving the Meulengracht regimen there was one death from a perforation. The feeding treatment appears then to have lowered the mortality. It also shortened the average stay in the hospital from 38 to 28 days.

PRIMARY HEPATIC CARCINOMA IN INFANCY

(R. V. Platou & A. J. Hill, Minneapolis, in *Jl-Lancet*, May)

There were 144 cases of primary carcinoma in 66,501 routine autopsies at all ages, 77 of these in children under 16 years, 28 under 1 year of age.

Of these tumors occurring in childhood 50% are found in children under 2 years of age, 35% under one year. Cases have been discovered at birth.

This lesion is twice as common in males as in females.

Two cases of primary carcinoma of the liver in young infants (aged 2 months and 3½ months) are described.

Ether according to Dudley Buxton was discovered in 1540 by Valerius Cordus. During the last quarter of the 18th century ether was employed medicinally for a number of diseases, including asthma and pulmonary tubercle, while at the time our story opens it had been increasingly used as an alternative to nitrous oxide gas for the production of frolics. These frolics seem to have been indulged in only in Great Britain and America. A French writer, M. Filvee, in his "*Lettres sur l'Angleterre*", published in 1802, described them as a vice peculiar to these countries and an example of the increasing decadence of the Anglo-Saxon race. —*Proc. Royal Soc. Med.* (Eng.) Feb.

NEWS

ALPHA EPSILON DELTA CONVENTION

Twenty-eight of the thirty-two active chapters were represented at the Seventh Biennial Convention of this honorary premedical fraternity, recently held at the University of West Virginia, Morgantown. Important questions were discussed. Realizing the need for an increased supply of physicians for the war program, the convention recorded the opinion that all premedical students should be urged to complete their college work in order to begin the study of medicine and make their training available as soon as possible. The national officers were instructed to call the attention of the Selective Service officials to the need of deferring competent premedical students so that an adequate supply would be available for acceptance into medical schools.

Of timely interest was the consideration of the problems facing the premedical student during the next few years when it will be necessary to correlate his college curriculum with the accelerated program of the medical schools. A program of activities for the fraternity and chapters was presented to the convention by a special committee appointed to consider how the fraternity can best serve in promoting the war effort. Wherever feasible all chapters agreed to undertake projects to assist the Red Cross in the blood procurement campaign, to assist in improving student health at the colleges, and to take the initiative in supporting all agencies which require work among college students in aiding the national welfare.

It was decided that for the duration the national fraternity should carry on its work through the summer in order to be able to better assist those chapters which will be active the year round.

One of the highlights of the meeting was the decision of the convention to assert their support of the war program by investing a substantial amount of the fraternity funds in war bonds.

Dr. Andrew E. Amick, Charleston, W. Va.; and Dr. Francis P. DeLancy, Morgantown ,spoke at a university convocation sponsored by Alpha Epsilon Delta. Dr. Amick's subject was Medicine and the State; Dr. DeLancy's, Medical Licensure. Dr. Frederick E. Keller of the Anderson Hospital, Philadelphia, principal speaker at the convention banquet, discussed The Idealist in Medicine.

The following national officers were elected at the final business session of the convention: President, Dr. Warren H. Steinbach, Department of Chemistry, University of Arkansas; Vice-President, Dr. H. E. Setterfield, Department of Anatomy, Ohio State University; Secretary-Historian, Dr. Maurice L. Moore, Medical-Research Division, Sharp & Dohme, Glenolden, Pa.; Treasurer, Dr. Norman F. Witt, Department of Chemistry, University of Colorado; and Councilor, Dr. Emmett B. Carmichael, School of Medicine, University of Alabama.

Davidson (N. C.) College Chapter was represented by Mr. Scotty Paterson, Davidson.

Dr. Crowell Entertains

On May 26th Dr. L. A. Crowell, Sr., Lincolnton, N. C., entertained at dinner a joint meeting of the Catawba Valley Medical Society and the Thermal Medical Society. Nearly a hundred doctors of Lincoln, Burke, Gaston, Rutherford, Cleveland and Catawba—with a few from Mecklenburg and one or two other counties—enjoyed Dr. Crowell's hospitality. The party was given at the American Legion Hut, between Lincolnton and Newton, with Dr. Roscoe McMillan, Secretary of the Medical Society of the State of North Carolina; the Judge of the Lincolnton Police Court, a Major in the first World War; and Mr. Charles A. Jonas, eminent Lincolnton attorney and former Congressman, as principal speakers.

Dr. Henry P. Wagener of the Mayo Clinic addressed the Mecklenburg County Medical Society the 5th of June on Ophthalmoscopic Aids to General Medical Diagnosis.

Dr. Wagener is a native of South Carolina and received his early medical education at Charleston.

Dr. E. C. Harper, Director of Tuberculosis Outpatient Service and the Crippled Children's Bureau of the State Health Department has been named Deputy Chief Emergency Medical Service in Virginia. Dr. Harper will succeed Dr. William Grossmann who left to assume duties as a captain, assigned to the Medical Department Replacement Training Center at Camp Lee. Dr. Grossmann was also director of the Bureau of Communicable Diseases.

MARRIED

Dr. Charles Mattox Kendrick, of Valdese, and Miss Clara Josephine Payne, of Lenoir, were married on May 17th.

Medical College of Virginia

Commencement exercises closing the 104th session of the Medical College of Virginia, Richmond, were held June 1st. Dr. H. E. Jordan, dean of the department of medicine of the University of Virginia was the speaker. Graduates number 64 in medicine, 31 in dentistry, 22 in pharmacy, 34 in nursing.

The honorary degree of Doctor of Science was conferred upon Dr. Ramon Suarez, of Santurce, Puerto Rico, a distinguished alumnus of the College of Medicine.

Gifts for the current session total $136,520.88.

Dr. Peter N. Pastore, an alumnus, has been made professor of otology, laryngology and rhinology.

Dr. Jacques P. Gray, one of the unit directors of the Michigan Community Health project of the W. K. Kellogg Foundation, has been appointed professor of preventive and public health medicine and dean of the school of medicine effective July 1st, 1942. Dr. Lee E. Sutton, Jr., who has been dean for the past ten years, will continue with the institution as professor of pediatrics. The major part of Doctor Gray's time will be given to the dean's office and associated duties.

The college will begin its accelerated program for the coming session on July 6th, the academic year being divided into three quarters of eleven weeks each with two weeks' vacation periods between quarters. This will permit students in the schools of medicine, dentistry and pharmacy to graduate in three calendar years instead of four.

The annual Stuart McGuire lecturer for the session 1941-'42 was Dr. John B. Youmans of Vanderbilt University. These lectures were combined with the postgraduate clinics on May 7th and 8th.

The U. S. Army hospital unit of the college, known as General Hospital 45, has been ordered to active duty. Lieutenant Colonel Powell Williams, associate professor of medicine at the college, recently succeeded Lieutenant Colonel Carrington Williams, professor of clinical surgery, as unit director. Miss Anne Parsons, associate professor of nursing, will head the nursing personnel of the hospital unit.



VITAMINS FOR THE 'MEDICINE SHY'

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UNIVERSITY OF VIRGINIA

Dr. Eugene M. Landis was elected President of the American Society of Clinical Investigation at the recent meeting in Atlantic City.

Dr. H. E. Jordan and Dr. C. C. Speidel attended the meeting of the American Association of Anatomists at the Cornell University Medical College in New York City on April 1st to 3rd. Dr. Speidel presented a motion picture demonstration on "Myelin Sheath Adjustments" and a paper (with Dr. H. E. Jordan) on "The Constancy in Number of Sarcomeres Within Individual Striated Muscle Fibres". Dr. Jordan presented a demonstration (with Dr. J. M. Robeson of Syracuse University) on "The Production of Lymphoid Nodules in the Bone Marrow of the Domestic Pigeon, Following Splenectomy".

Dr. E. P. Lehman was elected a member of the Board of Directors of the American Society for the Control of Cancer, to fill out Dr. Parran's unexpired term ending 1944.

At the annual meeting of the Virginia Academy of Science in Roanoke, May 7th to 9th, the following members of the staff of the Medical School of the University of Virginia presented papers before the group on Preventative Medicine and Bacteriology: Dr. George McL. Lawson, on the subject "Streptococci Resistant to Sulfonamide Therapy"; Dr. William E. Bray and Mrs. Jeanette S. Carter, on the subject "A Simplified Method for Anaerobic Plate Cultures"; Drs. Ralph B. Houlihan and George McL. Lawson, on the subject "Quantitative Determinations of Myxoma Virus in Nasal Washings, Blood, Feces and Urine and Their Relations to Transmissibility"; Dr. Kenneth B. Grim, on the subject "Kodachrome Photomicrography"; Dr. William E. Bray, on the subject "Human Infection Caused by Salmonella Sandiego".

In . . .

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TEXTBOOK OF CLINICAL PARASITOLOGY, Including Laboratory Identification and Technic, by David L. Balding, M. D., Professor of Bacteriology and Experimental Pathology, Boston University School of Medicine. *D. Appleton-Century Company, Inc.*, New York and London.

This textbook has been written to meet the needs of medical students, physicians, medical personnel of the armed forces, public health officials, laboratory workers and biologists. The author approaches his subject from the viewpoint of a biologist with a medical background. He has had many years of teaching parasitology to medical students, so understands the need of a text which subordinates all else to diagnosis and treatment.

The transmission, diagnosis and treatment of parasitic diseases are dealt with in section one; then come sections on the protozoa, the nemathelminthes (round worms), the cestoidea (tape worms), the trematoda (flukes), the arthropoda (flies, mosquitos, spiders, mites, lice, fleas, ticks, etc.); and a final section treats of technical methods for the diagnosis and treatment of parasitic infections.

It can not be doubted that many of the disease conditions elaborated in this book are going unrecognized rather generally, or that a study of the matter here offered will remove much of the cause for reproach on this score.

ELECTROCARDIOGRAPHY, by Louis N. Katz, A.B., M.D., Director of Cardiovascular Research, Michael Reese Hospital, Chicago, Illinois; Assistant Professor of Physiology, University of Chicago. Imperial Octavo, 580 pages, illustrated with 402 engravings including 806 electrocardiograms. *Lea & Febiger, Philadelphia,* $10.00, net.

This book meets the needs of the general physi-

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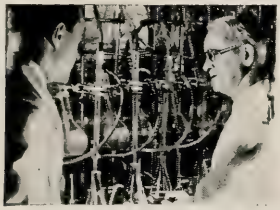
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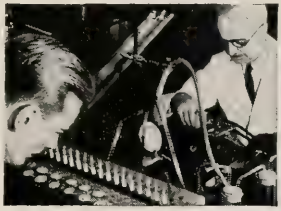
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***The Military Surgeon, Vol. 89, No. 1, p. 5, July, 1941*

****J.A.M.A., 93:1110—October 12, 1929*
Brückner, H.—Die Biochemie des Tabaks, 1936

REPRINT AVAILABLE of an important contribution to the medical literature on smoking—"The Cigarette, The Soldier, and The Physician," *The Military Surgeon,* July, 1941. There are many new angles on smoking experience revealed in this analysis—an aid to you when modifying patients' smoking without disturbing their smoking enjoyment. Write to Camel Cigarettes, Medical Relations Division, 1 Pershing Square, New York City.

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cian in solving many of his diagnostic problems. It integrates the clinical and experimental experience of the author over a period of twenty years. The subject is presented simply and concisely, and the text is profusely illustrated with detailed descriptions of the characteristics of each record. Text and illustrations together give the reader an understanding of electrocardiography necessary to interpret records accurately. Only so much of the background is introduced as is necessary to give a proper appreciation of the subject. It meets the needs of a text, an atlas and a book of reference. The three sections of this work are largely independent. The first deals with the theoretical aspects; the second offers a systematic description of the electrocardiogram in health and disease, and the third is a systematic presentation of the electrocardiographic diagnosis of the arrhythmias. In the second section the importance of the electrocardiogram in the diagnosis and management of coronary disease is emphasized and the value of chest leads is developed in detail. In the last section some practical hints as to the bedside diagnosis and management of the arrhythmias are included.

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Such a book should be at the hand of every doctor who treats patients for constitutional diseases.

The Lindlahr VITAMIN COOKBOOK, by Victor H. Lindlahr, Editor of Journal of Living; President National Nutrition Society. *Journal of Living Publishing Corporation,* 1819 Broadway, New York City. 1941. $2.00.

As the old jingle goes, civilized men can not live without cooks. Many of us think of a fat Negro woman with a bandanna wrapped about her head as the grandest of kitchen geniuses, and of the dietitian as a luxury we can spare without regret.

At first glance one might think the Vitamin Cook Book a book filled with directions as to how to prepare food containing just the calculated number and amounts of vitamins, and so unpalatable as to make any rational human being glad to die early in order to escape the necessity for eating such stuff. But this is not the fact. The book pays as much attention to palatability as to the "scientific" preparation of meals.

THE MODERN ATTACK ON TUBERCULOSIS, by Henry D. Chadwick, M. D., Commissioner of Public Health of the Commonwealth of Massachusetts, 1933-1938; Medical Director of Middlesex Tuberculosis Sanatorium, 1938-1941; and Alton S. Pope, M. D., Deputy Commissioner of Public Health and Director of the Division of Tuberculosis, Commonwealth of Massachusetts. *The Commonwealth Fund,* 41 East 57th Street, New York City. 1942. $1.00.

There are chapters on Tuberculosis Yesterday and Today; Epidemiological Aspects of the Disease; Diagnostic Procedures; The Sanatorium as a Means of Control and Treatment; Case Finding in the Community; and A Community Campaign of Eradication.

All these chapters are well worth the study of general physician and public health officer.

YOUR TEETH: Their Past, Present and Probable Future, by Peter J. Brekhus, B. A., D. D. C., Professor of Oral Diagnosis, School of Dentistry, University of Minnesota; with a foreword by Irvine McQuarrie, Ph. D., M. D., Professor and Head of the Department of Pediatrics, University of Minnesota. *The University of Minnesota Press,* Minneapolis. 1941. $2.50.

The use of the word probable in the title is encouraging. The text bears out the promise of the title. It is a balanced presentation of present knowledge of the subject, far less dogmatic than similar treatises of ten and twenty years ago.

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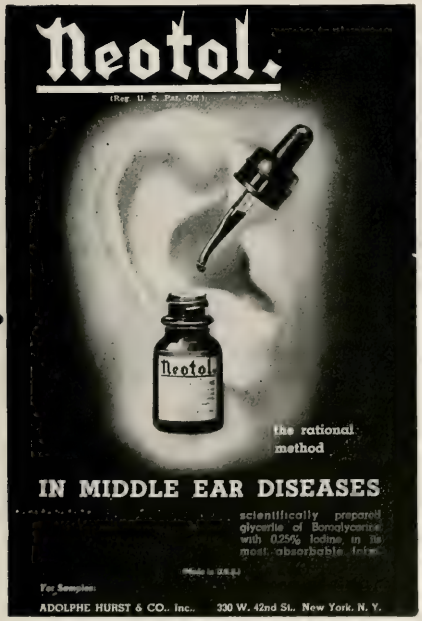
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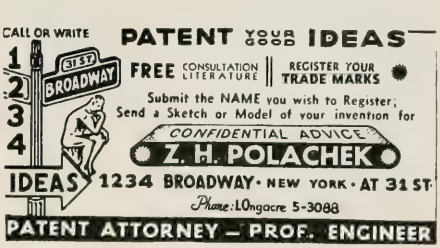
THE NATIONAL HOSPITAL FOR SPEECH DISORDERS is the only medical institution in the United States devoted solely to the diagnosis and treatment of speech and voice disorders and related nervous maladjustments. It is located at 61-63 Irving Place. Dr. James Sonnett Greene is the Medical Director. Since its founding in 1916 the Hospital has treated over 37,000 patients from all over the United States and many foreign countries. The hospital offers the speech sufferer a composite medical, social, psychiatric, psychologic and reeducational therapy. The Hospital occupies six floors, each floor is set aside and built to permit specialized activities. It is licensed by the New York State Board of Social Welfare. During 1941 a total of 3,394 patients were registered. Of the total of these 871 were private patients and 2,523 were free. It treats disorders such as Stuttering, Lisping, Speech Agitans, Idioglossia, Oral Inaccuracies, Dialectal Speech, Harelip and Cleft Palate Speech, etc.

THE NATIONAL BROADCASTING COMPANY has arranged a television tour. The visitor is shown the television camera, the boom microphone, great stage lights, the control board with its myriad keys, switches, lights, television receivers. If the visitor wishes he may appear before the camera, see in the receiver televised images of other guests. Many years of experimentation and laboratory work has brought forth the present-day stream-lined apparatus. Located in the RCA Building. There is a small admission charge.

ST. NICHOLAS COLLEGIATE CHURCH, Fifth Avenue and 48th Street. The bell that hangs in the tower of this church was cast in Amsterdam centuries ago. It pealed forth the official announcement of the Declaration of Independence July 19, 1776, by order of Washington in the presence of assembled troops. Theodore Roosevelt in his youth attended services here and later became a member of the church. A memorial tablet marks his pew.

THE MUSEUM OF MODERN ART, 11 West 53rd Street, offers a unique show July 1st to August 16th. It has invited ten American artists to submit designs for rugs which are being manufactured by the V'Soske Shops in their factory in Grand Rapids. The exhibition will include the original design, the cartoon, the completed rug, and photographs showing process of manufacture. The rugs will vary in size from about 3 feet in diameter to rugs 10 by 12 feet. They will be for sale.





AMERICAN GERIATRICS SOCIETY FORMED

Executive meeting June 11th, 3 p. m., Hotel Brighton, Atlantic City. Program at 4 p. m.

Purpose: Study of prevention and treatment of diseases of old age.

President: Lucien Stark, M. D., Norfolk, Nebraska.

First Vice-President: Wingate M. Johnson, M. D., Winston-Salem, N. C.

Second Vice-President: Walter E. Vest, M. D., Huntington, W. Va.

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Organization Meeting Program

Objectives of the Society: J. M. Northington, M. D.

Clinical Gastroenterology in Old Age: H. W. Soper, M. D.

Senile Heart: Lucien Stark, M .D.

Anesthesia in the Aged: E. A. Rovenstine, M. D., New York City.

Geriatrics and the War: M. W. Thewlis, M. D.

Treatment in Old Patients: W. M. Johnson, M. D.

Changes in Psychology Necessitated by Involution: Edward B. Allen, M. D., Brooklyn.

It is contemplated that a meeting will be held in conjunction with each annual meeting of the American Medical Association.



REPORT SULFADIAZINE IS EFFECTIVE FOOR INFLUENZAL MENINGITIS

Complete recovery of 5 to 7 children under 4 years of age from the highly fatal condition by treatment with sulfadiazine, is reported[1].

Influenzal meningitis is caused by *Hemophilus influenzae,* formerly thought to be the primary cause of influenza but now accepted as a secondary invader in influenza, which in itself is caused by a virus.

One of the 7 children treated died, apparently from a surgical procedure rather than the meningeal infection, and the other child died after premature stopping of the sulfadiazine treatment and the contraction of chickenpox.

1. W. Sako, *et al.,* New Orleans, in *Jl. A. M. A.,* May 23rd

CIRCUMCISION BY LIGATION

(C. J. Ross, Portland, Oregon, in *Northwest Medicine,* May)

Three years work on more than 1000 patients by the staff of the Portland Sanitarium and other physicians has perfected the technic.

The procedure is so different from any hitherto employed that it has called forth scores of inquiries. Doctors who have not used the method write to know about it, and those who experienced difficulty with their initial trials.

The idea: If a ligature were tied firmly around the prepuce in the same manner as a string is tied around a bag, and allowed to remain there a sufficient length of time, amputation of tissue distal to the ligature would result without use of either knife or scissors; there would be no blood loss, and the resultant circumcision line would be even.

A ring was made to provide for unobstructed urination. Prevention of slipping of the ligature off the instrument was assured by a groove in its outer surface. A handle, or bail, on the ring, which can be held with forceps provides easy adjustment of the ring to the proper position and prevents backward displacement.

New users report these difficulties: 1) insertion of the ring inside the prepuce, 2) development of a hematoma just proximal to the ligature, 3) bleeding, 4) difficulty in removing the instrument, 5) subsequent constriction at the amputation line.

Four forceps are necessary for the operation. One is attached to prepuce at the frenum at mucocutaneous line; two others are placed equidistant from each other and for mpoints of a equilateral triangle. Next the ring, smeared with vaseline and held in the fourth forceps, is inserted in triangular opening formed by the other three, using forceps at the frenum as a guide by resting the ring upon it and sliding the ring along it into the triangular orifice.

In some cases the operation is expedited by making a short dorsal slit in the prepuce; in many cases no slit is necessary, and in no case should it be long, as constriction of the prepuce occurs only near the margin. The tie is made posterior to the slit, so a long slit makes the tie difficult or impossible.

The ligature must be tied as tight as possible, and must have a tensile strength of at least 20 pounds.

When the ligature has been tied, excision of the prepuce distal to the ligature is recommended only because its retention is unsightly. This is routinely done, with the ring providing a machined guide for either scissors or scalpel. If the prepuce is cut too close to the ligature, a vessel may retract and produce a hematoma even though the tissues remain in place. The ring may be removed in 48 to 72 hours, although some leave it until it falls away.

Removal is by severing the ligature and gently pushing the prepuce back off the instrument. If the devitalized

tissue cannot be readily separated from the instrument, it is easily done by cutting the tisue at other points in addition to the site at which the ligature is severed. Remove the ring by a rocking motion, at the same time pushing the tissues back from the ring on the same side. This same motion is used in introducing the ring.

Subsequent constriction of the free margin of the prepuce may result it the skin is allowed to roll inward when the instrument is inserted. This is prevented by grasping the prepuce at the mucocutaneous line. Dusting the margin after excision hastens drying of the devitalized tissue.

THE MANAGEMENT OF URINARY STONES BY THE GENERAL PRACTITIONER

(C. P. Mathe, San Francisco, in *Clin. Med.*, Mar.)

In patients presenting lumbar and abdominal pain always suspect kidney or ureteral stone. Charles Mayo observed that practically every patient who came for the diagnosis and tratment of right-side ureteral stone had previously had an operation for appendicitis.

The nausea, vomiting, gas, etc. are often attibuted to lesions of the digestive tract.

The copious administration of fluids often results in the passage of small ureteral stones. From 75 to 90% of all ureteral stones can be made to pass, provided the ureter is dilated so that its diameter will exceed that of the stone. Ureteral dilatation by the passage of bougies and utilizing indwelling ureteral catheters gives a great percentage of cures with the minimal amount of damage.

A careful urine analysis should be made. Have a consultation with a competent urologist who will carry out any necessary investigation.

The dissolution of stones by dietary measures is rare. Indications for the use of dietary treatment: 1) non-obstructing calculus in a calyx; 2) patients refusing operation; 3) bilateral stones in a poor-risk patient, advanced kidney destruction; 4) a bedridden patient; 5) repeated attacks of renal colic and the passages of small stones, with x-ray findings negative; 6) alkaline incrustations in the bladder and loosely formed phosphatic gravel and sand in kidneys; 7) non-tuberculous calcification and ossification of the kidneys.

In patients with alkaline stone maintain H-ion concentration of the urine abound 5.0 or 5.5 by haliver oil and a diet high in butter, eggs, meat, seafoods, bread, cereals, cheese, rice.

In many cases acid sodium phosphate, ammonium chloride and mandelic acid are useful. In those patients presenting stones with proteus infection of the urine, sulfanilamide is of great benefit against infection and in preventing growth of the stone. All patients should be instructed to test the H-ion concentration of the urine by utilizing the simple nitrazene paper test t.i.d.

All stones should be subjected to chemical analysis and spectrographic study; the interior of the stone should be cultured and the lesions causing urinary obstruction should be corrected at the time of operation.

The intelligent treatment of urolithiasis includes the removal of the stone, elimination of infection, correction of urostasis, and adjustment of errors in metabolism.

In practically all patients presenting nephrolithiasis, the calculus will ultimately destroy the kidney that harbors it.

Cystine stones require a diet mostly vegetable. In addition, the urine should be alkalinized, because these stones are soluble in an alkaline medium.

I emphasize the great importance of collaboration between the general practitioner and a competent urologist, with the object of removing urinary stones and the institution of the proper diet to aid in the prevention of recurrence.

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JAMES M. NORTHINGTON, M. D., Editor

VOL. CIV CHARLOTTE, N. C., JULY, 1942 No. 7

Warfare: Antitheses in Behaviour*

James K. Hall, M. D., Richmond, Virginia

MAN'S CONDUCT is motivated by his wishing. Man's fundamental desires are two only. He wishes to live individually as long as possible. He wishes to live racially forever. His first desire is spoken of as self-preservation; his second, as race-preservation. Both desires are laudable. Man has called to his help the knowledge of science. He is interested in acquiring more and more knowledge to help him to live more securely and to live longer; and to make more certainly possible the everlasting projection of himself into the future through offspring. Whether man believes or does not believe in the possibility of personal existence, hereafter, in another world, he instinctively yearns to live on and on through descendants. And such everlasting self-perpetuation is made theoretically possible through the immortality of protoplasm—the structural basis of all animal life.

An infinitesimally small piece of the proper protoplasm, if detached from the animal and brought under favorable circumstances into physical union with an infinitely small particle of the proper protoplasm of another animal, initiates by such union the life of another animal. The coming-into-being animal will be recognizably like the parent animals, but somewhat unlike them, both and each. The infant animal may need, or may be obliged to have, for at least a brief period, parental care. But the infant of a particular species may neither need nor receive such care.

The physical form of the animal resulting from the parental protoplasmic union will depend upon the infant's physical inheritance. There were in the two coalescing protoplasmic particles derived from the parents, latent but powerful forces that inevitably predetermine the physical structure of the offspring. From like springs like. Even the most unlearned expect the progeny to be the physical replica of the parents. From cows are expected cows; from hogs, hogs; from dogs, dogs; from fowls, fowls; from humans, humans. All of us believe unquestionably in the invariableness of the law of predeterminism in the domain of the physical. And the dominance of the potency of heredity is equally as obvious in the vegetable kingdom. Figs are not gathered from thistles.

Were it possible for one to view in some anthropologic, photographic gallery portraits of his ancestors in an unbroken line straight along back for half a million years, I doubt not that long before the remotest ancestor was reached, one would exclaim with horror that such a creature was not related to him. I say this in some degree of confidence, because it has been stated with some show of truth that only about two per cent of man's history is known. Ninety-eight per cent of his racial life had already been lived when so-called

*Read at the forty-fourth annual meeting of the Tri-State Medical Association of the Carolinas and Virginia, Poinsett Hotel, Greenville, South Carolina, February 23d-24th.

history began. What our physical ancestors were like in those far-distant aeons we do not know, we do not wish to know; yea, we shudder even at the thought of contemplating their bodily form. They were animals, probably hideous in appearance, we would say of them today; they were living amongst other animals, many of them undoubtedly even more horrible to look upon.

Survival depended upon the animal's self-preservative mechanisms. From an environment largely hostile food must be obtained; from that same environment danger must be expected and steered clear of or warded off. The animal developed continuing modifications of physical structure in order to make survival more probable, by making the intake of food more certain, and to lessen the danger from the environment through facilities for flight or by fighting. Man's skeletogenous structure came into being to which a system of muscles were attached; circulatory, respiratory, nutritional and excretory systems resulted eventually from the evolutionary process. A central nervous system, with far-flung antennae, was needed to coördinate the systematic functions, and to acquire information about the surrounding region and to control movement.

So man slowly became a sentient, moving creature. Did the more elaborate bodily structure make possible and call into being the more highly endowed functions? Or did primitive, or preprimitive man's needs, yea, his latent and unexpressed "wishes", call forth the more complicated and more adequate physical mechanism through the activity of which man might feel, might know, might move voluntarily, might take into himself, might ward off from himself, might beget, and so might multiply and might become physically immortal?

As man evolved structurally in keeping with the urges and the guidance of heredity, his behaviour slowly underwent comparable modifications. It, too, became more complex, less reflex in type, and more looking-to an end. Man's behaviour must be as old as man's physical ancestry. It surely has increased in complexity both because of a need and because of a more complicated physical structure.

Man's responses of today—some of them, to be sure—must feel the influences of man's most primitive ancestors. If the individual in developing from the two fused parental cells recapitulates his ancestral development, it is not difficult to believe that the individual's behaviour likewise experiences ancestral urges and guidances. If our bodies are those of animals, it is not to be doubted that most of our natural behaviour is also animal—in origin and in manifestation—if not restrained or modified. And if so repressed or modified, the behaviour is not natural.

The epitomization of the above elaboration is that all of man's innate behaviour-tendencies are inheritances. Man was behaving for thousands of years before he possessed a mind—such as we speak of today. His behaviour, non-intellectual, probably dreadfully cruel and utterly selfish, served a high purpose. Such wholly animal behaviour kept our primitive ancestors alive and it enabled them to breed and to protect and to rear their offspring. In consequence of such animalistic ancestral behaviour we, their descendants, are here. Have our ancestors reasons for pride in us?

Instinctive behaviour is the tendency to respond in a more or less predictable manner as the result of inheritance. Behaviour is as much a latent potentiality of the germ-cell as structure is. We do not blame one for a physical defect or malformation. Should we blame one for a behaviour-defect or behaviour-digression?

Intelligence, so-called, is a recent human acquisition or evolvement; intellectuality—and it is rare, indeed— is a quality acquired almost as recently as tuxedos and tails and top-hats and nail dye and brassieres and nylon stockings. Man has not become easily accustomed to such things, nor has woman. Man had made no pretence at being moral or ethical or religious or law-abiding until a day or so ago. Man not only does not know how to practise any of those assumptions; he hardly knows how to affect the possession of any of those concomitants of civilization.

Primitive man, before he became anthropomorphic, was doubtless altogether natural and guileless and wholly honest. Affectation and dishonesty and morality were non-existent when our ancestors were mere animals. Ethics and legality and morality are man-made. Right and wrong are fabrications brought into being by man to enable him to feel superior to other animals and sometimes to his fellow-human.

The animal, man or a so-called lower animal, expresses himself; civilized man would repress most of his instinctive urges. To respond is instinctive and natural and easy; to repress is unnatural generally, dishonest often, difficult as a rule, and impossible not infrequently.

Such fantastic and imperfect civilization as we have is farcical. It is the hybrid progeny of expression and repression. But it is neither. The state that we call civilization is without good character and high purpose. It is nourished by base motives, lying, deception, hypocrisy, cunning and cruelty.

Man is fundamentally cruel. I have no doubt that he is sadistic. He is pleasantly affected by the sufferings of others—not near him in blood and in affection. Man in his heart hates civilization for himself. He advocates it for his neighbour.

Civilization will keep his neighbour from being troublesome to him or dangerous to him. For the same reason man likes for his neighbour to be religious, for a neighbour actually religious is a good neighbour. But man insists that his personal civilization and his personal religion be modifiable—as elastic and as conformable to circumstance as a garter or a bathing suit.

Man is in a state of constant rebellion against law, but he succeeds most of the time in repressing and concealing his revolt against legality. If eighty or ninety per cent of man's conduct is of instinctive origin, is it any wonder at all that man rebels against the fettered life he is compelled by the demands of conformity to live? I think it highly creditable to man that he instinctively and persistently insists upon being his naturally expressed, unrestrained self.

Children, babies, and still older little ones, behave in sweet and shockingly instinctive fashion. The training of a child implies the development in the child of affected, unnatural behaviour that conforms to the artificial standard. A baby is as natural and as primitive and as cruel as a hyena. It can be neither good nor bad, because there are in the baby's world no such hypocritical creations of man. The baby is a baby, as the pup is a pup.

One of the most distressing experiences of my life came from witnessing our three lovely little golden-haired, precious demons pass from honest, swearing, fighting, vocal, noisy delightfulness into splendid-looking young men; quiet, proper of speech; well-mannered, Sunday-school-goers, and now sailors and soldiers; all three of them gone out into the world with sword and flame and bayonet upon which to uplift the heathen. One of their playmates of only yesterday, so it seems to me, already lies in a soldier's grave in the Philippines.

Why are we always perturbed by warfare? It cannot be because of the element of surprise. I am not an octogenarian, and our peace-loving country is engaged in its third war within my memory; each of them an away-from-home war. The country that does its fighting always on its own soil may claim self-defensive activity; but the country that fights its soldiers from Bali to Baghdad and on all the Seven Seas cannot easily validate the statement that it abhors war.

I think man loves warfare. I believe warfare may exhibit man's most natural behaviour. Fighting is in man instinctive. If he cannot fight in battle, he will fight vicariously. He will do battle through a surrogate. Man loves the prize fight. He thinks the victor always symbolizes himself. The bleeding and broken nose, the bruised and blued lips and ears pleasantly appeal to his eyes; and the thud, thud of fist on head, trunk and neck are sweet music to his ears.

Man is constantly transforming and elaborating and storing energy. Man is an energy-system. I do not know what energy is, but I think it is that which does work. I think energy cannot be created; it is already in existence in many forms, and it is rather easily transformed from one form into another. Energy, unlike many people, resents inactivity and idleness. It would be always busy—on week-ends, Sundays, holidays; all day, all night, in good weather and in bad. Energy, not unlike steam, apparently dislikes to be confined. It is constantly seeking release. A human being is a mere reservoir of energy.

I often think that the individual who can provide a sufficient number of congenial and wholesome outlets for his energy is fortunate. Such an individual is likely to be both adequate and happy. But the person whose energy does not find such release is almost certain to be unhappy and unsuccessful.

Man's energy may be managed by his intellect, by his emotions, by his instincts. Conduct motivated by instinct is biologically most natural, most easy, and racially the wisest. Behaviour manifesting deep emotion is likely to be most violent and difficult to control. Fear and grief afford illustrations. Intellectual conduct is the most difficult and the most unnatural. It represents man's most recently evolved conduct, and man exhibits as little skill and ease in its performance as an infant in walking. But probably no behaviour is wholly intellectual or entirely emotional or altogether instinctive.

The primitive instincts cause man to yearn and to hunger. There are few fundamental hungers. Man hungers for food and for drink; he yearns for protection against heat and cold; he hungers sexually; he probably yearns for companionship—if for many companions, he is said to be gregarious. And man may instinctively yearn to be superior, to excel, to be pedestalized, to be looked up to. That may include the yearning to be victor, to conquer; perhaps to kill. But killing may be only the final step in establishing superiority over another. Yet I am inclined to believe that man is instinctively a killer; that he kills because it excites him pleasantly. An instinct asks only for gratification. The hungry person eats to relieve discomfort and not to nourish the body. Sexual gratification is pleasant; it makes appeal for that reason and not because it makes possible offspring. If fighting is instinctive, and I think so, man yields to fighting, not fundamentally to achieve a purpose, but to satisfy a hunger. Instincts, ungratified, tend to make the individual tense, nervous, unstable, unhappy. Gratification of instinctual hunger affords

relief; yielding to instinctive urge may be wise or foolish, helpful or hurtful, but it is always biologically natural and therefore satisfying.

Although man is probably more generously endowed with instincts than any other animal, yet man knows that instinctive conduct is under a ban—most of it—and he is driven to the necessity of keeping his instinctive urges stoutly repressed, or he tells stories about them. By going backward in behaviour a few thousand years man may behave instinctively and naturally and in deeply, profoundly satisfactory fashion. That stepping back into our ancestral animal past is called retrogression. Sometimes we go away back there to escape affectation and hypocrisy—to rest and to obtain relief. Nothing is more fatiguing and disgusting and unsatisfying than affected behaviour, even though it may bring so-called success and social esteem. Man would prefer to be honest merely because it is easier. But man may regress, not only to escape from something, but also to obtain some object or to create an opportunity. Sometimes man becomes intoxicated in order to regress out of a civilized world into an animal world; or man may go fishing or hunting, or to New York, or down to Miami, alone, or accompanied. Man may regress into that state in which his ancestors fought naturally and terribly, but joyously. The modern soldier may regress for that purpose, unconsciously, without knowing it in words. We generally do the thing more easily and better if we do not understand intellectually just why we do it. The purpose of all manual training to to make action so easy and perfect as to be automatic.

Giving a good name to a sorry dog is spoken of in psychology as rationalizing. Gratifying the instinctive urge to kill constitutes in civil life a capital crime; doing the same thing in warfare represents patriotic behaviour. The dead murderer gets a pauper's grave; the military killer gets a monument. Fighting and killing in battle are easy, joyous, indeed, if they represent regressive conduct. And such killing becomes supremely satisfying if it wins high approval—congressional medal, iron cross, purple heart, what not? The purpose of training recruits is, I assume, to lead them, or to drive them, back regressively for a few thousands of years, so that they may become as bestial and as blood-thirsty as their ancestors once were. Then they will do their killing splendidly and fearlessly. And their governments and their sweethearts will proclaim them lovely heroes.

Man is the most predatory, the most wanton, the most destructive, the most cruel of all animals. He kills for the joy of killing, and he exults in it.

I am not speaking of your brave ancestor nor of mine, nor of you, nor of me, but of all of us mortals—of the primitive, instinctive urges that saturate all of us and that cry out constantly for satisfaction.

What strange admixtures we are! How base and terrible! How grand and glorious! In going to the front, in the deadly fighting where men and animals were being blown to pieces, General Lee dismounted from Traveller and gently placed the little birds back in the nest from which they had fallen. Just before the opening of the Chancellorsville campaign, Stonewall Jackson was told that the litle golden-haired Corbin child, who had been his pet during the winter months, was dead of diphtheria. We wept inconsolably, but amidst his tears he signed the warrant that sent some of his own soldiers before the firing-squad for desertion.

Warfare affords man the opportunity to ennoble himself by the display of god-like qualities; and to satiate himself, too, by lustful, hand-to-hand, regressive slaughter. No other activity save war makes such equal demands upon all that is base and all that is unselfish and grand and heroic in man. For all the warriors do, low and high, we crown them in life and memorialize them when dead. While men are men, and women are women, man will fight his fellowman. Warfare releases his instincts, liberates his highest emotions, and gives him companionship amongst the world's mightiest immortals.

LOCAL SULFANILAMIDE THERAPY IN SURGICAL INFECTIONS

(J. R. Veal & R. G. Klepser, Washington, in *Surgery*, Dec.)

We have treated over 300 infected wounds of all types by the local implantation of sulfanilamide powder. The results have been so excellent that this method of treatment has now supplanted all other forms of local treatment in our hospital.

In the great majority of our cases the smears and cultures showed a mixed flora—streptococci, staphylococci, the *B. coli* group and diphtheroids. The growth of all of these was inhibited by the application of sulfanilamide. The common secondary invader, *B pyocyaneus*, was promptly destroyed by the drug.

The wound must be adequately drained, necrotic tissue removed, and all surfaces of the wound made accessible to the powder. A sufficient quantity of the concentrated sulfanilamide powder is placed upon the wound to cover the surface entirely and a dry dressing is applied. In most cases 5 to 10 Gm. have been applied daily until the infection has been controlled.

The prolonged use of concentrated sulfanilamide powder may retard healing. The substitution of sulfanilamide-allantoin ointment for the pure powder allows a prompt resumption of the normal healing process and at the same time maintains a clean wound.

DIABETES IN PREGNANCY.—The incident is not great. From two large groups of hospitals 2.1 and 0.8 diabetics per 1,000 pregnancies, respectively. Fetal overweight, always a major hazard in diabetes pregnancies, occurs only when the diabetes of the mother has not been regulated properly.—*Mosenthal.*

Arthritis Clinic*

Russell L. Cecil, M.D., New York City

If you are to treat arthritis, it is extremely important to learn to recognize the major types. Today we can almost eliminate the venereal cases. The gonococcus seems to be on the run these days more or less. We don't see much venereal arthritis in our clinic. The two great types are osteoarthritis and rheumatoid arthritis. That is what we see mostly in New York and I imagine it is what you see here. Most of the cases of joint diseases, outside of orthopedic cases, are either osteoarthritis or rheumatoid arthritis. Then there is a group of arthralgias, most of them menopausal or post-menopausal.

A great many pains come from what we call psychosomatic rheumatism. These occur in rather high-strung and often constitutionally inadequate individuals, who get pains when they are worried about something, and the more they worry the more the pain increases.

The pathology present in the two large groups of arthritis is as follows:

1. *Osteoarthritis,* changes primarily in the bony parts.

2. *Rheumatoid arthritis,* disease of the soft tissues, starting with the synovial membranes and going to the capsule with swelling.

I amuse myself sometimes trying to diagnose arthritis "as it comes in the door," that is, as the patient walks toward me. I try to guess what kind of arthritis he has by the looks of him. The osteoarthritic is usually stocky, rather heavy set and in many cases obese. Osteoarthritis can occur in either sex, is commoner in women than in men, and usually in individuals past middle age.

Rheumatoid arthritis is usually seen in younger people, coming on in the 20s, 30s, or early 40s. Three out of four such patients are women and usually women of a rather definite type, what we might call visceroptotic type. They resemble the tuberculous type—lean and not very robust physically; they are introspective, and "good worriers." They are energetic, intense people, nervous and high-strung. The onset of rheumatoid arthritis is often a swollen finger, coming on after some psychic trauma; an operation; tonsillitis or some other infectious disease. Something upsets the equilibrium of the patient and starts the disease process.

We were talking this morning about the effects of trauma. I have seen rheumatoid arthritis come on after an automobile accident. It may be the actual trauma; but more likely it is a psychic trauma from shock, which is as important as the physical. I don't like the term traumatic arthritis except in an acute condition such as a sprained ankle. I think in the case of trauma we are dealing with a mechanical condition which should be classified as an orthopedic rather than an arthritic condition.

These patients came in today as a favor, so that I might demonstrate the different types of arthritis to you.

Case No. 1.—A travelling man, 56 years old, doesn't do much hard work.

Dr. Cecil: When did you begin to have joint trouble?

Patient: Four years ago.

Dr. C: The story of arthritis is usually written in the hands, so the first thing you look at is the hand. Usually by a physical examination of the hand (and x-rays), you can classify the arthritic patient. This case might be confusing at first. How long have your fingers been this way?

P.: Four years.

Dr. C.: The proximal phalangeal joint is enlarged. At first glance, one might think it is rheumatoid arthritis. However, I am quite sure that this is a bony enlargement and that it is osteoarthritis.

P.: It isn't entirely in my joints. It is like red hot needles going down.

Dr. C.: You can palpate the joint. There is no soft tisue involvement. There is an enlargement in the bones at the articulating margins. X-ray shows widening of the joint at the contact point with some slipping. He can make a pretty good fist. This is what we call a benign form of arthritis, that is, osteoarthritis. If he takes care of his hands, they will never give him much trouble. Do they cause you much pain?

P.: They usually do.

Dr. C.: If he had rheumatoid arthritis, he would not be able to get his fist closed. The prognosis in this case is excellent. There is a gradual change in the bone and it may be a little worse ten years from now but there probably won't be much change. He will have to be careful of his knees and hips because of extensive bony changes. Did you inherit arthritis?

*Presented to the 44th Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greenville, S. C., February 23rd 24th.

P.: My mother had it.

Dr. C.: Is your neck stiff most of the time?

P.: Yes. Occasionally there is a "boil" right here in these muscles and it will last a few hours, sometimes longer.

Dr. C.: Notice that in addition to the proximal joint, he has some distal disturbance also. That is where one usually gets osteoarthiritis. These proximal joints are enlarged but they are not usually enlarged so much. It might be a little confusing at first glance. This patient might be relieved by sodium iodide injections or x-ray exposures. These patients we tell to stop worrying. A great many of the arthritics need reassurance more than anything else. Some friend or relative may have gotten a deforming arthritis and the minute the patient notices an enlargement and pain in his own finger, he thinks, "My goodness, I am getting what sister Jane has." For this patient, rest, heat and reassurance are the indicated forms of treatment.

Case No. 2.—Now the next type of case I want to show you is a different picture, namely that of rheumatoid arthritis. Radiology is a great help to us in diagnosing arthritis. One can get rheumatoid arthritis at any age. Notice the joint changes you get in infectious arthritis, particularly that soft-tissue swelling. Sometimes we encounter a confusing picture called "mixed arthritis." We have one or two patients here today that might be so classified. All of us get osteoarthritis as we get older, but *it is not a disease unless it hurts*. Rheumatoid arthritis is really a disease because of what can happen unless it is properly handled. This patient is of the type I spoke of. The first patient I showed you is of the short, stocky type that gets osteoarthritis. This patient is the slender, rather delicate type, quite energetic! Tell us how your trouble started.

P.: We moved into a new home. I had always been a very energetic person. I enjoyed doing things. I guess I had been quite busy and had been denied the privilege of having flowers. I had lived in an apartment. Immediately I went to work on a flower garden. My husband sent a 200 pound sack of fertilizer. The boy had left it in the middle of the drive. I shifted the fertilizer. I moved one side and noticed pain half an hour afterward in the right thumb joint.

Dr. C.: Another point I want to bring out as we go along—did this pain jump from joint to joint?

P.: No, it stayed in the joint. Next day the pain was very excruciating. I went to a doctor and he said I had pulled a ligament. He taped it and the following day it came in other joints and from then on it was migratory.

Dr. C.: The reason I asked that question was that I wanted to show the difference between rheumatoid arthritis and osteoarthritis. This patient has the jumpy form. Osteoarthritis as seen in Mr. Willingham is not jumpy. It comes and stays put. The pain is migratory in this type.

Were you very sick, Mrs. Freeman?

P.: Yes.

Dr. C.: When the patient begins to get constitutional symptoms, he is very apt to have secondary anemia.

How much weight have you lost?

P.: Not over eight pounds from my normal weight.

Dr. C.: Has the arthritis gone on continuously since it started or are you at times free from pain?

P.: The pain was excruciating for eight months or more. Of course I was under the care of a medical doctor for two years and gradually grew worse until Dr. Wilkinson got me a year ago and I began to improve. I have only tenderness and soreness now.

Dr. C.: In rheumatoid arthritis, patients often have little pain and stiffness when at rest. They can often sit in a comfortable chair free of pain. It is only when they move that the joints hurt.

Please hold your hand out. Remember the pictures I showed you last night. I think that having had arthritis three years, she is very lucky. I suspect that rheumatoid arthritis is more benign in South Carolina than it is in New York. In cold weather the disease is more progressive and the changes more marked.

P.: For ever so long I couldn't close my fist last year.

Dr. C.: You can close it now. Let's see the kind of fist you can make. A pretty good fist.

P.: But I couldn't do that six months ago.

Dr. C.: Show me your wrist movement. Not a great deal.

P.: The soreness is right in there.

Dr. C.: The wrist is one of the first joints to become ankylosed in rheumatoid arthritis. She has no flexion deformity in the elbows. Put your arms over your head. Are your neck movements free?

P.: Yes.

Dr. C.: Does it hurt to get down on your knees?

P.: No, it doesn't hurt.

Dr. C.: Her knees are not much swollen. There is a little puffiness in the knees, more marked on the left. However, she still has active symptoms in the knees and hands. The knees and hands seem to bear the brunt of the attack in rheumatoid arthritis. Indeed, I think it is true of both types of arthritis that the joints which take the brunt of the attack are the knees and hands. Have you ever had pain in your jaws?

P.: No, sir.

Dr. C.: One could use gold salts with benefit in this case. Start with 10 mgm., and one week later, 25. If the patient takes it well, you can give 50 mgm. the third week and go along with this size dose for sometime. After six weeks of gold injections she ought to feel distinctly better. This treatment is satisfactory because one doesn't have to wait too long for results. Other agents work slowly; but gold, when it works, acts fast, and much to the patient's delight. She will have to have monthly blood counts and urinalyses and weekly inspection for skin rash or sore mouth. If she gets itching of the skin, you'd better reduce the dose of gold.

Doctor: Dr. Cecil, does sulfanilamide do any good in these cases?

Dr. C.: No, sir. Myochrysine is a water-soluble gold salt and is easy to administer. Solganol is an oil-insoluble suspension. Both salts are injected intramuscularly.

Doctor: How long is it kept up?

Dr. C.: Usually up to a total dosage of 500 to 1000 mgm. (0.5 to 1.0 gram). I wouldn't give a small person single doses of more than 50 mgm. Those who have worked with gold extensively can give as much as 100 mgm. to some patients. One of my own patients was recently given as much as 200 mgm. at each injection without trouble at all, but I had him under close observation and could obtain a pretty good idea of what he could take.

Case No. 3.—Dr. Cecil: I don't know why so many school teachers get rheumatoid arthritis. Every Saturday morning at my office in New York we are swamped with arthritic school ma'ams. Most of them are spinsters. This patient points an accusing finger at me when I say "spinsters" and shows me her wedding ring! You have never had any children?

P.: No.

Dr. C.: Tell us about your arthritis.

P.: Mine began in my feet and ankles.

Dr. C.: What do you think gave it to you?

P.: I had a sore throat and this seemed to come after my throat cleared up.

Dr. C.: This was two years ago?

P.: Yes.

Dr. C.: Doctor Wilkinson, was it really tonsillitis, do you recall?

Dr. Wilkinson: I did not see her at all during that time.

Dr. C.: Did you have fever with it?

P.: Yes, I did.

Dr. C.: How soon after your sore throat did you get the joint disturbance?

P.: Five or six days. However, my throat kept leaking, and there is a dripping from my head even yet.

Dr. C.: That sounds almost like rheumatic fever. We see it frequently in children who have had sore throats followed in ten days or two weeks by swollen joints. Now Doctor, in answer to your question about sulfanilamide—if you give it *before* the onset of the sore throat and thereby prevent the sore throat, it will prevent the rheumatic fever, but if given *after* the sore throat, it does not prevent rheumatic fever from coming on.

P.: I suffered excruciating pain all that time and I still suffer.

Dr. C.: Are your joints swollen?

P.: Yes.

Dr. C.: Where did you get the swelling?

P.: In my ankles.

Dr. C.: Let's see your ankle. I am not going to hurt you much. She gives a jump when I press her ankle. Have your knees bothered you any?

P.: Less than any joints in my body. Most of my trouble is in my neck and more on my left side and I had it some on my right side; more in my left hip and in both ankles and my fingers have been sore.

Dr. C.: You are better?

P.: Much better.

Dr. C.: These rheumatoid patients are a great tribute to Dr. Wilkinson's skill. They are so much better that it is hard to demonstrate any positive signs.

Dr. C.: She makes a very good fist. Do you have any pain in your wrists and elbows?

P.: Yes.

Dr. C.: There is slight flexion deformity in the right elbow. How much weight have you lost?

P.: I have lost about 30 pounds since I had that sore throat.

Dr. C.: She had an elevated sedimentation rate. Osteoarthritis gives a normal or only slightly elevated sedimentation rate. Rheumatoids have marked elevation. It comes down however, if they improve rapidly. Have you had any periods during the two years when you were free from pain entirely?

P.: In very hot weather.

Dr. C.: You were not working then?

P.: Yes, I was working as a sales girl.

Dr. C.: You don't get much vacation?

P.: I find that when I rest, I get stiff and have so much more pain.

Dr. C.: What you should do is to rest in a tub of warm water.

P.: I have tried everything.

Dr. C.: Don't you get relaxation with heat and warm water?

P.: Yes, but when my body cools down, I get stiff again.

Dr. C.: Do you take exercises? Dr. Wilkinson hasn't been using gold salts but I think she would be helped by small doses of gold therapy, in spite of the swelling in her fingers. She has had pain and swelling in the fingers and I think I would classify her as a case of rheumatoid arthritis.

How old are you?

P.: Forty-one. Diathermy helped me a lot.

Dr. C.: Any form of heat is beneficial. I think you are doing too much work. You ought to have a rest period every day.

P.: Do you think that rest as I take it will not make my joints stiffer?

Dr. C.: I don't think so. What about your appetite? Do you eat enough?

P.: Yes, I have a good appetite.

Dr. C.: You need still more appetite. A patient who puts on weight gets better at the same time. However, I am not entirely sure whether putting on weight makes them get better, or whether getting better makes them put on weight. I do like to see a rheumatoid patient put on weight.

Doctor: Does low carbohydrate diet help these people?

Dr. C.: Do you feel better when you leave starches and sweets alone?

P.: Yes, I feel better when I stay off starches and sweets. I told Dr. Cecil it may be imagination playing havoc with me but I have experienced that. At Christmas time I broke over and ate everything and I didn't feel nearly so well for several weeks until I got back to my regular schedule.

Dr. C.: It is all right to cut down on sweets, but don't lose any more weight. I certainly don't like to see rheumatoids get any thinner than they already are. I think that we have to be sensible about it. Don't cut out too much starch.

P.: I drink about three pints of sweet milk every day, in addition to vegetables, and I have a meat every day and eggs and cream and I have a little bread.

Dr. C.: Both these cases are mild but persistent. We have many relapses after gold therapy is discontinued. I think both these patients being a rather mild type and not having progressed rapidly, would be very much helped by gold therapy. I am stressing only the high points in the treatment. These patients should have vitamins, and particularly in winter they should have cod liver oil. My colleague, Dr. Henry Dawson, puts stress on unrefined cod liver oil, but very few of my adult patients will take it; they kick mightily and claim it gives them indigestion.

Case No. 4.—Dr. Cecil: This lady, I think, belongs to a different category. Her joints don't swell but she has pain and stiffness in the muscles. How long has your trouble been going on?

P.: About a year.

Dr. C.: How old are you?

P.: Forty-seven.

Dr. C.: Have you had children?

P.: No.

Dr. C.: You aren't married?

P.: No.

Dr. C.: She has lived an uneventful life and is now 48 and there is every reason to believe that she is approaching menopause. Do you have hot flashes?

P.: No, sir, I'm always cold.

Dr. C.: Are you nervous?

P.: No, sir.

Dr. C.: Do you have palpitation or pains all the time or do they just come on occasionally?

P.: My feet and ankles hurt most of the time.

Dr. C.: What kind of work do you do?

P.: Textile.

Dr. C.: Do your feet get very tired?

P.: Yes.

Dr. C.: Do you find your work much of a strain on you?

P.: I am stooping a lot.

Dr. C.: Does the work you do make you nervous?

P.: No, sir.

Dr. C.: I don't see how this case could be classified as anything but arthralgia. I certainly wouldn't call it arthritis. I don't believe x-rays would show anything because there is no enlargement of the bones of the hands. We are dealing here with arthralgie plus overwork. She does more than she should at her age. I have an idea she would get over her aches and pains if she didn't work in a factory. We see a lot of arthralgias in patients around the time of menopause.

Are you going on working indefinitely?

P.: Yes.

Dr. C.: I should think stilbestrol would be very good for her. These patients get over the hot flashes, of course, but the joints don't always respond as well as we'd like to estrogenic therapy and in such cases physiotherapy and general building up is the program.

Dr. Sieve: In this particular syndrome, do you always investigate the metabolic picture as well as the estrogenic?

Dr. C.: Certainly. Did she have a metabolism test?

Dr. Wilkinson: Cholesterol 300 and B.M. minus 12°.

Dr. C.: Is she taking thyroid?

P.: I have taken thyroid.

Dr. C.: Have you improved any?

P.: Yes.

Doctor: Do you give stilbesterol by mouth?

Dr. C.: Yes.

CASE NO. 5.—DR. CECIL: This patient I show with reluctance because I don't know what is wrong with her. I would like for some diagnostician to tell us what she has.

P.: I have acute pain in my arms and legs and when I use heat, the skin becomes mottled.

DR. C.: The skin has been more swollen than this, hasn't it? It looks like a toxic allergy. Did you ever have splotches on other parts of your body?

P.: Yes.

DR. C.: Tell us about your joint pain.

P.: Well, this came on the first day of June, on a Sunday afternoon. It was exactly like I had touched the short circuit of an electric stove, sudden acute pain. I thought it would pass in a minute and it didn't and it began to get blue and by morning my finger was perfectly stiff. I put epsom salts on it and it didn't subside.

DR. C.: How long ago was this?

P.: This past June, but I started suffering with my feet early in the spring. Every morning there was a red line from my big toe.

DR. C.: It looks a little like a mild rheumatic fever. She has had symptoms only a short time.

P.: Sometimes when I write letters it is perfectly black.

DR. C.: She is 52; it might be osteoarthritis, but there is not much soft tissue swelling. Whatever it is, I don't think it is serious. I think it is going to be all right.

P.: The pain is exactly like touching the nerve of a tooth.

DR. C.: If it wasn't for the fingers, you'd think she might have bursitis.

DR. WILKINSON: She never did show any bursitis.

DR. C.: Thank you very much, gentlemen.

HUMAN BITES

(F. F. Boyce, New Orleans, in *Sou. Med. Jl.*, July)

The possibility of bites should be borne in mind in any hand injuries, and an endeavor should be made to elicit the facts. An ordinary injury should be sutured immediately, whereas *closure of a human bite is the worst possible form of treatment.* Be suspicious.

Thoroughly cleanse with soap and water for 10 minutes, then irrigate with physiologic salt solution or clear sterile water before any attempt is made to determine the depth of the wound by the methods suggested. Devitalized tissue is then excised under anesthesia, well beyond the area of injury while the blood supply is cut off by a blood pressure apparatus on the arm, which should be kept in place as short a time as possible. No attempt is made to repair or carry out any plastic work because of the risk of sloughing. If the joint capsule has been opened make collar incisions in the adjacent web spaces for adequate drainage. The injured part is splinted, in hyperextension if the extensor tendon or joint space has been injured. Compressing is carried out cautiously for the first several days, not to the point at which edema and maceration would occur and the dorsum of the hand is directed downward to promote drainage by gravity.

The organisms in the human mouth, chiefly the fusiform bacilli and spirochetes in symbiosis, various streptococci, sometimes other organisms, are responsible for the seriousness of this type of infection.

Treatment of early cases requires the conversion of the anaerobic state to an aerobic state, and the excision of devitalized tissue in which bacteria might grow in symbiosis. Treatment of late cases frequently must be mutilating.

BOVINE TUBERCULOSIS IN MAN IN BRITAIN

(Dr. S. Roodhouse Gloyne, in *Proc. Royal Soc. of Med.* (Lond.) May)

It is estimated that 1% of deaths from respiratory, and 23% from non-respiratory tuberculosis at all ages are due to the bovine bacillus; whilst some 33% of children under 5 who die of tuberculosis in this country are victims of this type. Recent investigations have suggested that the estimate of 1% for the respiratory form of the disease errs on the conservative side. It is as high as 7% in some parts of Scotland. In 1932 Fishberg wrote that he believed tuberculosis of bovine origin to be proportionately "more common in the British Isles than in any country in the world."

Tuberculosis due to the bovine type seems to be sharing in the general decline in the tuberculosis death-rate. There is not sufficient bacteriological control of cases in each decade to be quite sure.

The percentage of bovine infections is highest in Scotland and lowest in the South of England. There appears to be areas where bovine tuberculosis is endemic.

Bovine tuberculosis seems to have been unknown in Guernsey until 1902. In that year some cattle from Guernsey imported into the United States were found to be reactors and on inquiry in the island it was found that in the previous year a local breeder had applied to the Royal Court of Guernsey for permission to bring back to the Island some cattle which he had sent to a show in England. Such a course was contrary to the Regulations then existing, but unfortunately permission was granted. These cattle were subsequently found to be suffering from tuberculosis, and an outbreak of the disease occurred which took some years to eradicate.

EMERGENCY CARE OF WOUNDS, HEMORRHAGE AND SHOCK

(L. M. Thompson, Washington, in N. Y. State Jl., Feb. 15th)

In severe bleeding think first of pressure. With our hands we can control bleeding by pressure in front of the ear, at the side of the jaw, at the side of the neck, behind the inner end of the collarbone, inside the upper arm and in the middle of the groin. A tourniquet is rarely needed. When used it must be released every 15 minutes to prevent gangrene.

All wounds causing severe pain or hemorrhage will be accompanied by shock. All the layman needs to know is to keep the victim warm by blankets or garments under and over him, and application of *tested* heat by hot-water bottles or improvised methods; to keep the feet elevated and the head low. Hot tea or coffee after bleeding is controlled. Shock treatment must be continued during transportation.

The layman must remember that even small wounds have danger of infection. A mild tincture of iodine applied in and around the wounds on a dry surface, alowed to dry, a sterile dressing applied and the application of the proper bandage are as far as the layman should go. The victim must be impressed with the necessity of seeing a physician no matter how small his injury.

Geriatrics and the War*

Malford W. Thewlis, M.D., Wakefield, Rhode Island

GERIATRICS will play an important part in total mobilization. A large percentage of aged people can contribute to the war effort if physically and mentally sound. In Germany old men work in munitions factories, and only recently the Hudson Motor Company advertised for workers up to the age of 98. Ford employs men in their seventies even when they are blind or have lost a limb, or when they are afflicted with chronic disease.

As men are being absorbed by the armed forces women are being fitted into gaps left by inducted men, but there are tasks which are best performed by men who are expert mechanics and office workers, even if they happen to be in their sixties and seventies. It cannot be denied that whenever high speed and great muscular strength are required older men are handicapped; however, research does not justify the rejection of workers on an age basis.

There are over 13,000,000 people past 60 in the United States. Many of them are unemployed; they feel defeated. With a minimum of conditioning most of them could be physically rehabilitated and made effective again. Ford found that elderly men are often as efficient as younger men. Apparently the accident rate decreases with age, probably because old men are more experienced and more cautious. According to official statistics, crime decreases decidedly after the age of 40. In most penitentiaries it was found that only 10 per cent of the prisoners were over 40 years old.

If efficiency over a long period is considered the capitalization of aged labor may prove most profitable to industrial and commercial concerns. A comprehensive labor policy could be devised which would include aged workers if skilled and sound.

A careful study of data on productivity, accident, sickness, group insurance, and pension plans, leads to the conclusion that there is hardly any relationship between age and financial burden. The prejudice against older workers rests largely on erroneous impressions.

Reabsorption of old men by industry will relieve the state of a financial burden, since pensions can often be cancelled, at least for the duration, if the aged are not idle. Consciousness that they are contributing to the war effort will restore independence and self-respect to old people who will be identified as defense workers. Many who are now pensioners will be self-supporting and integrated in their communities. A man aged 80 lost a forearm in an accident; he is now on a government pension but does do odd jobs. In Hartford, Connecticut, an 84 year old man applied for a job in a war production factory and made it plain that he wanted a permanent position. He was given a position as grinder—a trade he had followed for sixty-three years. One must be on guard, however, not to use up essential materials in the process of keeping the aged at work. They should be working only on something which will further the war effort.

Employers might study more carefully their production charts to find out what occupations older workers may suitably be entrusted with. They may be good salesmen, the knowledge of people's tastes and requirements may be the result of long experience and should be adequately valued. Department stores in Massachusetts have a large proportion of employees who have been employed by the store for over 20 years, and a number of others for more than 40 years. Only one-fourth had worked in stores less than 10 years. This shows clearly that the long tenure of the employment is associated with long experience in the same line of work. Older saleswomen outnumbered old men in those stores. In those department stores, the service of old employees was regarded as efficient, in spite of (and often because of) their age. There are, of course, better employment opportunities in retail selling than in manufacturing industries because of relatively smaller demands made on physical vigor, but it is doubtlessly also due to fewer changes in technique.

The labor departments in Pennsylvania and California have carried on campaigns to obtain lists of firms that would not refuse to hire men on account of age "when they are physically and mentally able to meet the requirements of the position for which their services may be required". In public employment service the older groups should be given preference for the jobs which can be performed satisfactorily and efficiently by the older individual.

To redeem these men it may be necessary to send them back to a trade school for a refresher course. This also applies to other professions. Older physicians who replace younger men in the service would welcome the opportunity of taking a refresher course and performing their duties in a smaller community where there is a shortage of

*Read in the organization meeting of the American Geriatrics Society, held at Atlantic City, New Jersey, June 11th, 1942.

physicians. Thus their services are already sorely needed.

Young nurses can be replaced by older nurses who have been forced into retirement by competition. A refresher course would enable them to function effectively.

Older physicians are capable of carrying on extensive practice. Jacobi, the pioneer of pediatrics in this country, was practicing at 80 and I remember his crowded waiting-room. There are many active physicians past 65 years. I recently saw a 78-year-old physician who is doing good work in a rural area; he covers about 50 miles a day, drives his own automobile and is really efficient. He is the only practitioner available to the people of his section.

Before resuming work older people might undergo a physical examination by a geriatrician who can determine at which level they can best function without endangering their health. There is little to be gained by filling overcrowded hospitals with victims of coronary artery occlusions which may follow injudicious activity.

Physical examination should include a careful check on the condition of the cardiovascular system. Important too is the estimation of renal function. In the course of examination several minor ailments may be disclosed which can be corrected by simple measures, but as to recuperation from illness and injuries, no marked difference is found among workmen of the different age groups. It is obvious that the physician who attempts to rehabilitate these old men is making a valuable contribution to the war effort, but he must remember that more men will die from vascular disease than from wounds.

This war is total war and every one of us should do what he or she can to help win; it implies being as nearly physically perfect as is possible. Graded exercises (especially walking on level ground) are helpful . To repeat, a large percentage of the elderly can be physically redeemed, but when in training they should be allowed frequent rest periods, even if they are short ones. Part time work is suggested in certain papers dealing with the old age question.

It is, of course, a moral duty of the employer to provide proper physical working conditions for older men, but it is also self-interest, since it prolongs the period of their efficient service. Some industrial concerns transfer older workers to departments where work is least strenuous, they alter the terms of their contract. Some companies list the types of work suitable for older employees and reserve certain positions for them. The percentage of suitable jobs ranges between 4 and 6 per cent.

It is not encouraging that the Bureau of the Census finds that there are 8,000,000 persons in the United States who are receiving an income of less than $400 a year. One fourth of the nation's families has under $750 a year; more than two-fifths incomes under $1,000; nearly two-thirds under $1500, and less than one-third incomes over $1750.

Older people must have a diet providing essential foods; the best vitamins are more readily obtainable in foods than in powder or pill form. Many old people have become debilitated because they lacked the means to purchase the right food; when they resume work and become economically secure they can afford a better diet. Many of these people have reached old age because they had never overeaten, but as their activity increases they require more food. The geriatrician must keep them in good health.

Five-hundred thousand men and women over 65 have already refused to retire on government pensions, preferring to contribute to war production. More than 20,000 of those already receiving pensions have written to the Social Security Board asking that their money be withdrawn because they have taken positions covered by social security insurance in industries. Many others while receiving pensions are taking agricultural or other such uncovered occupations. According to records only 288,000 out of 700,000 persons entitled to old age and survivors' insurance are receiving it. There will be further changes in this direction.

By observing geriatric principles many elderly persons can again become effective and it has been proved that they are capable of doing efficient work. Massachusetts legislature passed a measure some time ago designed to protect older persons discriminated against on an old-age basis. There will be a place for them in the future because winning the war requires our entire man power, and provisions must be made for better utilization of the productivity of the old, especially of the age group from 55 to 65, but also for still older men and women. If they can be included among the regular earners, the economic load will be more justly distributed, with 60 per cent of the entire population supporting the whole, instead of 47 per cent as it is at present.

Physicians have to fill a large order and rehabilitate the old whenever possible, and fit them into the pattern of total war: utilization of available manpower whenever needed. When the emergency is over the older men should be willing to retire on pension which may be regarded as a war pension rather than an ordinary old age pension if they have been engaged in defense work, and thus integrated in the war effort.

(To Page 389)

The Future of Geriatrics*

James M. Northington, M.D., Charlotte, North Carolina

THIS SUBJECT is not of my choosing. Dr. W. L. Dunn, for many years a distinguished internist of Asheville, N. C., answered the inquiries of his tuberculous patients as to how long it would take to get them well with: "All the Prophets were Jews: Dunn is Irish." I am not even Irish. And I rather doubt if a one of the Major Prophets would have had the termerity to offer very confident predictions as to the future of a thing with neither present nor past, which indeed, as a pessimist would say, is not yet past the danger of dying a-borning.

In only one particular can I qualify as a prophet and in that only at the rear. It is written that Elisha, on his way to Bethel, was met by little children who ran out to meet him and called out, "Go up, thou baldhead"; which so offended this sensitive prophet that he had two she-bears come out of the wood and tare forty-and-two children of them. I share the prophet's affliction, but lack his power.

With this strongly qualifying preamble, and with the warning that a good deal of the little I shall have to say will strain the meaning of the word future, I proceed.

Anciently, although exercising vast authority, the old did not get their share of the atention of the medicine of the time. Perhaps this was because intelligent appraisal of the medicine of the time after long observation made the old shun rather than seek its ministrations. Even now all of us know too many who, like the poor woman who came to the Lord, have "suffered many things of many physicians and had spent all she had, and was nothing bettered, but rather grew worse."

Now, with the great increase in numbers of the old, and consequent revival of the authority of this group, along with the introduction of marvelously efficient agents for the prevention and cure of disease; were not more attention paid to the medical needs of the old voluntarily, we might confidently look for it to be paid on insistent demand.

Thinking on the future of any movement naturally is, first, what needs to be done; and second, what part of what needs to be done can be done.

General impressions come to mind; then we search our memories and our records to see whether or not, according to our own experience, these general impressions are valid; or—and none of us is entirely guiltless in this particular—to find all the evidence in *support* of conclusions already arrived at.

On minds concerned with the state of health of the old certain disease conditions obtrude themselves.

Cancer is the disease most associated in the popular mind with the taking off of old folks. It does kill hordes of the moderately old, and it ranks high among the killers of the very old.

For many years we have had a "Society for the Control of Cancer", numbering in its membership many of the most earnest and most capable of the students of this great health problem. That a great deal has been accomplished is very doubtful. The deathrate from cancer among the membership of the Society for the Control of Cancer is discouragingly high. William J. Mayo, Carman and Welch died of cancer. In Charlotte, North Carolina, in the present decade, a doctor superbly trained and head of a cancer clinic died at about 40 —of cancer. The instances might be multiplied indefinitely.

I am convinced that our approach to the study of cancer should be changed. Who among us has not, finding a patient failing to respond to treatment well calculated to bring about improvement, put aside the records of the case, and started off anew with history-taking and examination? That is what I would like to see done in the study of cancer.

Over many years I have presented to those in charge of the Society for the Control of Cancer my view that the name should be changed. Shakespeare's derisive question, "What's in a name?" nothwithstanding; there's a lot in a name to help or to hinder. Our objective is not to control cancer: our objective is to exterminate it. We try to control things essentially desirable and useful—children, horses, dogs, automobiles, fire, the flow of water, air currents. Those of us seriously and energetically trying to do away with tuberculosis join the Anti-Tuberculosis Association—an association *against* tuberculosis. The zealots hostile to "the demon rum" enlist under the banner of the Anti-Saloon League—and then by some inscrutable mental process proclaim themselves to be advocates

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and exemplars of *temperance!*

Cardio-renal-vascular conditions of disease, degeneration and wearing-out are of special concern to us. Happily, the world has moved on from the time when pretty nearly every day somebody—not infrequently one possessed of the degree of Doctor of Medicine—stated the latest figures as to the reduction in the death rates from diphtheria and typhoid fever for the past 50 years; and then demanded to know, "why haven't you reduced the death rate from heart disease correspondingly?"

Pneumonia, the friend of the aged often, has been to a large extent robbed of its opportunity of doing the aged to death as the lesser of two evils.

Tuberculosis is the means of death of many more of the aged than is commonly realized. Those tough fellows with great ability to form fibrous tissue and lay down calcium deposits are prone to outlive the children and grandchildren to whom they have given the disease, and then themselves die of tuberculosis.

Diabetes and its arteriosclerosis, with or without tuberculosis, while mildest in the old, is not here as innocent a state as many conceive it to be. However old the patient with diabetes, a victim actual or potential he is; and, while he should not be plagued to death about the height of the sugar concentration in his blood, or about the appearance now and then of a bit of sugar in his urine; he should be required to keep to a reasonable diet, to stay out of crowds, to keep his feet as clean as he keeps his face, and to repeat to himself and for himself daily, the admonition of the Lady of the Queen's Bedchamber, to a newly engaged bath maid: "One scratch on Her Majesty's alabaster hide and off comes your craven head."

Now about the old man's tribulation, obstructive enlargement of the prostate. In their readiness to explain everything, doctors in former times glibly ascribed this condition to riding horseback or to the residual effect of gonorrhea. Up to the time when every man now having an obstructive prostate, everybody who was anybody rode horseback; and pretty nearly all of these of the masculine persuasion had gonorrhea. It would be interesting to know what wooden horses will be trotted out to bear the burden of responsibility for the prostatic obstructions of succeeding generations.

Associated in many old men's minds with enlargement of the prostate is the decline and fall of the sexual powers. That Nature is in the main an *alma mater* is probably true. But why she decrees that, in growing old, a man shall lose his teeth and his hair, and retain his testes, is beyond reasoning comprehension. North Carolina has a considerable fame, of a sort, as to procreative power. Who has not heard of her Reuben Garris, the father of 30-odd? Or of the Confederate veteran who became a father at the age of 96? I do not vouch for the authenticity of these allegations; but I do know intimately a Doctor of Medicine, born in the county of which Charlotte is the county-seat, whose father was 87 when he was born and whose youngest sister was born when their father was 92. And the grand-father of this doctor, as a grown man, fought under General Nathanael Greene in the Revolution. I was a guest at the celebration of the 60th wedding anniversary of the nephew of this doctor, who also was present, and only 52 years old. A few years ago, in looking through a copy of the *North Carolina Medical Journal* for the year 1876, my attention was attracted to a notice of a doctor's death at the age of 68. The notice went on to say that the Doctor had been married for the first time on a certain date. A simple subtraction fixed the duration of the doctor's life as a benedict at less than four months. Some five years ago a Senator of the United States, long past his prime, was married at Havana to a lovely widow, many years his junior. The Senator died in a Pullman car berth in North Carolina, on the return trip from Havana to Washington.

Perhaps no better place could be found for the mental aberrations of the old. To detail any of these would be superfluous. To suggest a preventive measure might be in order. Is it, or is it not, your impression that the vast majority of these pitiable states develop after retirement, often forced, from all duties, deprivation of all responsibilities?

A few days before the completion of my internship, 30 years ago, an old lady left the hospital with a healed fracture of the hip. Returning after six weeks and going through the wards I found that old lady in the same bed. Within a week after she got home she had fallen and broken the neck of the other femur. A short time ago an old lady visiting her son in Charlotte decided to go down in the basement and look around. She tripped on the stairs, fell and broke a hip, and died a few days later in a hospital. A common way of the old being seriously injured is by falls in, or geting into or out of, the bathtub.

Old folks generally sleep best in their own beds, and do not adjust themselves readily to change from their long-established routine. Going from home to hospital, for any of us, is going into a new world. At home the old man or woman is a person of authority; in a hospital, most often, patient number so-and-so, to be awakened for morning care at about the time he or she has been able to get to sleep, to be served all meals at hours different from those that have been the lifelong habit—supper hours before anybody outside a hospital thinks of eating.

Most of the elderly are interfered with unnecessarily in the choice of their food, as to kind and quantity. The cases of three old ladies under my observation till they were well up in the 80's illustrate the very diverse diets on which an old person may get on well. One had eaten excessively of sweets from her youth, even to putting sugar on all her vegetables, cooked and uncooked. The second ate largely of all things good to eat, especially of beef and mutton. The third, still living, eats very sparingly and practically all her meat is pork.

The old suffer more from neglect, from being shunted aside, left out of things, than from physical ills. Indeed, craving for attention, may make those who have been among the most independent and self-sufficient conjure up symptoms or magnify trivial ones.

Contrary to popular belief the old stand surgical operations well. The number of old women dragging out a miserable existence from prolapses and their sequelae; the number of old men always uncomfortable from hernia; the number of both sexes given a salve when they complain of "piles", without even examination, "because if it should be found to be cancer, he (or she) is too old to be operated on"—the sum of all these must be large enough to appall.

Too much is said about the diminished cardiac reserve of the old. Last October an 84-year-old gentleman came under my care because of anginal attacks and dropsy. A few doses of one of the newer mercurial diuretics and a good many doses of nitroglycerine made a new man of him. The 40 per cent of him that was unneeded water went off through his kidneys. He gets about wherever he wants to go, eats well an unrestricted diet, works at odd jobs about the house and yard, keeps up with everything that happens in the world—and he has not had a dose of medicine for months.

I assume that word future in the title means that some statement of what the development of a specialty of geriatrics may hope to bring about.

My hopes may be anticipated from the background I have constructed.

The formation of the American Geriatrics Society will give encouragement to many old men and women, who have felt neglected in that every other group had specialists. Pronouncements of opinions by this Society, or by any individual member of it, will carry greater weight with the old. And, be it remembered, our Government, in all its branches, is run by the old.

We would do well to take some united action as to cancer. That cancer campaigns, cancer weeks and periodic health examinations have done more good than harm is extremely doubtful. More of good would probably be derived from annual x-ray examinations of the gastrointestinal tract of those from 40 to 55; this because cancer here is so prone to go on to the inoperable stage before causing symptoms. It would be well worth the effort to change the name of the American Society for the Control of Cancer, to some name expressing the objective of the Society.

Heart, kidney and blood-vessel deficiencies of the old are largely due to wearing-out processes. We can lessen the load and there are some effective remedies for use in emergencies. All living things must die. Our objective is not to enable a person to live forever, even to live to be a hundred. Thousands of years ago some observant person wrote, "The days of a man's years are three-score-years-and-ten: and if by reason of strength they be four-score, then is his strength but labor and sorrow." Today it is much the same, with much of the labor and sorrow of the additional ten years removed.

Pneumonia of the aged can be largely prevented by having them avoid chilling and crowds; especial care during operations, on the way to and from operating-room and after operations; or it may be cured by a sulfonamide. There is little if any reason for giving serum in pneumonia.

We can do much for old and young by teaching by all the means available that tuberculosis is far more prevalent among the old than is generally supposed, and by insisting that appropriate action be taken.

The old diabetic is helped almost in direct ratio as we emphasize measures for keeping him from developing pneumonia or gangrene, rather than for keeping his blood-sugar normal or his urine sugar-free.

One of the greatest boons conferred on mankind in our time is transurethral resection of the prostate. I trust we all will work in confident and eager collaboration in the development of this operation to its highest usefulness.

I am hopeful that we may exert a large influence toward disabusing the minds of old men of the idea that sexual failure is a disgraceful affliction not to be borne. A priori reasoning would make one think this failure would be welcomed, as the passing of one more urge which might be taken to be an obligation, or at least as the disappearance of one more troublesome and expensive appetite.

It seems that it is rare for the old to become much mentally afflicted so long as they have a daily job. We do well who provide occupational therapy for our patients who have quit their regular occupation. And this should be work of a kind that serves some useful purpose, which if he or she neglect it will mean loss of time or money to others. Seeing that the old are consulted about family plans, told about social matters and in every way treated as rational, interested human beings, will

go far toward keeping them rational human beings. And when they become irrational we can exert our influence that they be taken care of at home so long as this is possible.

We can exercise our influence that stairs up and down which old folks must go be equipped with rails one on each side of the staircase, that nothing be left on the steps to stumble over, that small loose rugs be not put on slippery floors, that bathtubs be equipped with grips and rubber mats, that a light be within easy reach of the hand at the bedside, and a bell for summoning aid.

Two of the commonest and most serious of mistaken ideas are, one, that the only place a person can learn is in a school; and, two, that getting a person into a hospital of itself facilitates restoration to health. Hospitals are essentials. They are blessings. And like most other blessings, they are greatly abused. Too often a patient is ordered into a hospital, not for the good of the patient, but for the convenience of the doctor. I have entertained myself with noting how few doctors die in hospitals. Unless following soon on an automobile accident or a major surgical operation, the odds are that a doctor will die at home in his own bed.

Particularly in the case of an old patient is home the place at which, in the vast majority of instances, and with few exceptions and they well-defined, is the old patient's chance of recovery *better* at home than in hospital.

If we emphasize this fact at every opportunity after awhile it will dawn on patients other than the old that no magical powers are conferred on bricks and mortar and steel and timbers by putting these articles together in a certain way and naming the result hospital.

Unless we *know* that a change in an old person's diet will be beneficial it is best to leave the diet as it is. The same applies to alcohol, tobacco, tea and coffee. In the subconscious of a majority lurks the idea that, since the Fall, all mankind's natural propensities are evil a;nd so, if a descendant of Adam gets pleasure out of eating or drinking or seeing or touching a certain thing, of a certainty that certain thing is bad for him. Old folks have seen the rise and fall of too many fads to be much fooled by those of our day. The principal reason why orders that they be faddistically fed seldom does them any harm is that they generally disregard the orders.

Our influence might well be exerted to have indicated operations done on many more old patients, and this would cause other doctors' old patients to have such benefits in larger and larger numbers.

We need not despair of doing something for an old man or woman, even though we think the chance slight. A slight chance is better than no chance at all and no Gloomy Gus should be entrusted with the health care of the old.

A few points as to therapy in the old. A soft rubber urethral catheter may be diagnostic and curative in a puzzling case. An enema of warm water or oil is the best means of dealing with constipation that develops in spite of fruits, greens and copious draughts of water. No rectum should be insulted by having injected into it so irritating a substance as soap. Many a belly pain will be promptly relieved by putting a hypodermic tablet of nitroglycerine under the tongue. Oxygen by inhalation is a potent analgesic in many, if not most, painful states, and it is not very costly. Physical therapy methods, massage particularly, would benefit a lot more of our patients.

Let us resolve in the very beginning that no member of this Society will ever write or say that a certain remedy "may" be given. We can thus help improve therapy for all.

Would it not be well, too, for us to set an example by substituting *management* of our patients for *treatment* of our cases?

Few of our patients will expect miracles at our hands. The most that most of them expect is comfort of body and mind. To this we can contribute greatly if we will, for resignation is the hope of age.

The interest manifesting itself by the formation of the American Geriatrics Society can and will add years to the lives of old folks; and, what is much more important, it will add life to their years.

THEWLIS—From Page 385

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The wounded in Libya and Syria.—The hot meal within ten minutes of arrival and the shave made the reputation of our unit among the troops. For patients with compound fractures hot drinks, morphine, rest and warmth and a cigarette were generally sufficient to produce a happy response in an hour or so, when operative treatment then could be undertaken.—An Australian Major, M.C., in *Aust. & N. Z. Jl. Surg.,* April.

The American College of Physicians has announced its 27th Annual Session to be held in Philadelphia, April 13 to 16, *1943.* Other medical societies are urged to avoid conflicting dates, for mutual benefit.

Improved Technic for the Preparation of Blood Plasma

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OUR ORIGINAL TECHNIC for the preparation and transfusion of blood and plasma has been much modified since the details were first published[1] in this journal six years ago. The original bottle, illustrated in figure 1, has been modified as illustrated in figures 2, 3 and 4. The bottle now in use (figure 4) has a capacity of 600 c.c. and can be centrifuged in either the Tomac or the International centrifuge.

Although we have modified our technic several times, we have not abandoned our original premise that blood must be collected in a sealed container and that plasma must be prepared in a closed system. The necessity for these condition was clearly demonstrated to us in our early work before a closed system was developed. Blood collected in open containers and plasma prepared by an open system was too frequently contaminated. This observation has been confirmed by everyone who has attempted the preparation of plasma by an open method. A sealed container permits the use of a vacuum in all bottles. The vacuum is controlled by the valve illustrated in figure 5.

The technic to be outlined has been proven by adequate experimental and clinical trial to be eminently satisfactory.

BLOOD DONOR APPOINTMENT CARD

Name .....

Your appointment to donate blood

For ..... is at ..... A. M.

Date ..... 194.....

Please eat only the foods listed below:

Bread *without* butter
Tea or Coffee *without* milk or cream
Sugar
Jam or Jelly
Orange or Tomato Juice
Fruit

1. *Selection and Preparation of Donors*

A. *Diet*

In order to prepare clear plasma, it is essential that the donor refrain from ingesting fat for a period of not less than 8 hours, preferably 10 to 15 hours. The best plasma is prepared from blood collected from donors who have fasted overnight or have limited their diet to the breakfast outlined below. When it is desirable to collect blood in the late afternoon, donors must coöperate by limiting their noon-day meal, as well as breakfast, to the outlined diet.

B. *Physical Examination and History*

(a) A physical examination should be made and a history taken before the donor comes to the bleeding center. Donors admitting a history of the following diseases should not be accepted.

Asthma
Hayfever
Urticaria
Rheumatic fever
Tuberculosis
Syphilis
Recent malaria
Recent undulant fever
Recent loss of blood
Recent illness

(b) Only donors with satisfactory veins should be accepted, as it is a waste of time and money to try to collect blood from donors whose veins are small and difficult to locate.

(c) On the day the blood is to be withdrawn, the donor's temperature should be taken and a hemoglobin estimation made. If the donor has fever or hemoglobin below 75%, blood should not be drawn.

(d) From donors weighing less than 125 lbs. no more than 300 c.c. of blood should be drawn; from those weighing more, 450 c.c. to 650 c.c.

(e) Donors should not be made to wait longer than is necessary, and they should not be permitted to view the drawing of the blood. Long waits and the sight of blood make donors more liable to faint.

(f) If the donor becomes nauseated, prespires freely, the pulse rate slows or he becomes pale during or following bleeding, the administration of one or two drachms of aromatic spirits of ammonia in a small quantity of water and the inhalation of a few whiffs of the aromatic spirits from a pledget of cotton will usually prevent fainting.

(g) Donors must rest in the recumbent

1. Preliminary Report of a New Method of Blood Transfusion, Elliott, J., *Southern Medicine & Surgery*, Dec. 1936.

position for not less than 30 minutes after blood has been withdrawn. Food or fluids should be served to donors during this rest period.

(h) Donors can be bled at monthly intervals, but it is probably best not to bleed more frequently than every six to eight weeks.

(i) If donors are treated with proper courtesy and consideration they will frequently volunteer for additional donations.

2. *Bleeding of Donors*

A. *Preparation of donor's skin*

This is extremely important, as improper preparation of the donor's skin is the most frequent source of contamination of plasma.

(a) Briskly cleanse the skin with 10% acetone in 70% alcohol.

(b) Apply 7% tincture of iodine and allow to act for 1 minute.

(c) Wash iodine off with 95% alcohol and apply sterile alcohol sponge.

(d) Do not touch the skin over the donor's vein at any time after the skin is sterilized.

B. *Preparation of donor bottle*

The bottle used for the collection of blood should be a sealed vacuum bottle containing an adequate quantity of pyrogen-free sodium citrate solution. The bottle illustrated in figure 4 has proved entirely satisfactory for whole-blood storage, as well as for the collection of blood for conversion to plasma.

(a) The aluminum cap and first rubber diaphragm is removed.

(b) The top is liberally coated with 7% tincture of iodine.

C. *Preparation of the donor set*

(a) Unpack the sterile donor set and close the donor valve. (The donor set consists of the valve illustrated in figure 5 connected by a length of rubber tubing with a 15- or 16-gauge long-bevel needle.)

(b) Remove the protecting rubber-stoppered glass vial from the donor valve needle and insert the needle through the *X* mark in the rubber stopper of the donor bottle.

D. *Phlebotomy*

(a) Apply tourniquet.

(b) Remove the rubber-stoppered glass vial protecting the donor needle and insert the needle into the vein of the donor. The operator must not touch the skin over the donor's vein with his fingers after the skin is sterilized.

(c) Open the valve slowly until the tubing is filled with blood and then gradually until the desired flow of blood is established.

(d) Gently shake the bottle during the collection of blood to insure mixture of the blood with the citrate solution. It is unnecessary to shake blood collected for conversion to plasma as vigorously as blood collected for whole-blood transfusion. If small clots form they will be removed by centrifugation.

(e) If the valve is opened too far the vacuum in the bottle will pull blood from the vein faster than it flows in. When the lumen of the needle engages the wall of the vein it becomes occluded and blood will not flow. Both of these factors cause the rubber tubing to collapse and hemolysis frequently results. This can be prevented by adjusting the valve so that blood is withdrawn not faster than it enters the vein and by adjusting the position of the needle so that the wall of the vein is not engaged.

(f) When the desired amount of blood has been collected, close the valve, release the tourniquet and remove the donor needle from the vein.

(g) Withdraw the needle from the stopper of the bottle, place the donor needle in a dry test-tube, open the valve and drain the blood from the donor set. Withdraw the needle from the first tube and place it in a second tube containing a few c.c. of sodium citrate solution and let the last drop or two of blood drain into the citrate solution. This blood will furnish serum for serological examination and cells for typing.

(h) The donor set must be cleaned immediately after use and sterilized within a few hours.

3. *Storage of Blood*

A. *Temperature*

While it is certainly optimum to store blood at refrigerator temperature we have over and over demonstrated conclusively that sterile blood can be transported or stored at room temperature for at least 24

hours without deterioration. If blood is stored at refrigerator temperature it must not be permitted to freeze. Although refrigeration at constant temperature is probably desirable, our experience has led us to conclude that reasonable variations in temperature do not lead to significant changes in stored blood.

(a) Whole blood must not be converted to plasma within the first 24 hours after collection unless it is to be used within a short time. If long storage is contemplated, heavy precipitation of fibrin will occur at an early period in spite of dilution.

(b) Place the blood in a refrigerator as soon as practicable after collection and store for at least 24 hours and not more than five days before centrifuging.

4. *Centrifugation of Blood*

A. *Balancing trunnion cups and bottles*

(a) The trunnion cups and bottles must be perfectly balanced for the satisfactory separation of plasma. Match the bottles and balance all of them against either one bottle or a known weight, using rubber bands and/or water.

(b) Balance with water in all cups so that if evaporation occurs during centrifugation it will be about equal.

(c) Centrifuge at 2000-2300 RPM for not less than one hour. Test the speed of the centrifuge with a tachometer as the RPM on the dial will vary with the weight of the cups and bottles. *Do not use the centrifuge brake at any time.*

(d) If the cups and bottles have been accurately balanced and loss of water by evaporation is equal, the supernatant plasma will usually be free of cells. However, there will frequently be a swirling of red cells upward into the plasma as the centrifuge comes to rest. As it takes several hours for these cells to sediment, the bottles of blood should be placed in a refrigerator for about 24 hours before aspirating the plasma into final storage containers. If the plasma is to be pooled, the supernatant plasma can be aspirated immediately into the pool as the red cells will sediment in the pool bottle.

5. *Pooling of Plasma*

Whereas pooling of plasma is not essential, it is frequently desirable. By pooling plasma in 2000 c.c. (figure 6) pools the of cultures necessary can be reduced. If plasma is stored in the pool bottle for several months, any fibrin that forms will sediment, leaving the supernatant plasma clear. When the plasma is aspirated into the final storage bottle, it will be clear and free of fibrin and will remain so for several months.

A. *Filling the pool bottle*

(a) Aspiration should be done in a room as clean as can possibly be had and with light sufficient to see the aspirating needle at all times.

(b) Make sure that the serological test for syphilis is negative.

(c) Remove the aluminum cap and first rubber diaphragm from a 2000 c.c. pool bottle.

(d) Apply a liberal coating of 7% tincture of iodine and allow it to act for at least one minute.

(e) Expose the rubber stopper of the donor bottle and apply a liberal coating of 7% tincture of iodine and allow it to act for one minute.

(f) Unpack the sterile air filter. The sterile air filter is made of a cotton-filled open glass vial connected by a small length of rubber tubing to a 15- or 16-gauge needle protected by a rubber-stoppered glass vial.

(g) Unpack the sterile aspirating set (figure 5) and close the valve. This set is made up of a donor valve connected by a length of rubber tubing with a 6″ aspirating needle.

(h) The protecting glass vial is removed from the air filter needle, and the needle is inserted through the large free hole in the rubber stopper of the donor bottle to make an opening through which the long aspirating needle may be inserted. It is then withdrawn and inserted through the other free hole in the donor bottle rubber stopper, *if this hole is not connected with an air tube.* If it is connected with an air tube the air filter needle must be inserted through the *X* mark in the donor bottle rubber stopper. Leave the air filter in place throughout the aspiration.

(i) Insert the valve needle through the *X* mark in the stopper of the pooling bottle and the long aspirating needle through the perforated free hole in donor bottle.

(j) Open the valve and start aspiration. Make certain aspirating needle is beneath the surface of the plasma in the collecting bottle at all times as vacuum will otherwise be lost.

(k) The plasma is to be aspirated as rapidly as possible until the last portion is reached, the last 30-40 c.c. slowly to prevent drawing over cells, leaving 10-15 c.c. in the collecting bottle. Leave the aspirating needle in the first bottle until the next bottle is prepared.

(l) Remove the air filter, place it in the second bottle and continue the procedure until the pool bottle is filled. If either needle touches anything not sterilized a fresh set must be opened and used.

6. *Culturing the Pool*

Store the pools of plasma at room temperature for three to ten days before culturing in order that any organisms present may multiply.

A. *Preparation of the pooling bottle for culture*

(a) Expose the rubber stopper of the pool bottle, apply a liberal coat of 7% tincture of iodine and allow it to act for at least one minute.

(b) Place an alcohol sponge on the top until ready to culture.

B. *Culture medium*

(a) Brewer's medium has been found valuable for our purposes. Cultivation of strict anaerobes, as well as aerobes, is possible in the same tubes without the aid of special equipment, seals, etc. The sodium thioglycholate in this medium combines with merthiolate and growth is much more likely to occur if the plasma be contaminated.

(b) Use large tubes, each containing 30-50 c.c. of culture medium. Brewer's medium must be stored at room temperature and used within thirty days after preparation.

C. *Culturing*

(a) Aspirate 20 c.c. of plasma from the pool bottle, using a 20- to 30-c.c. syringe and a 1½-inch 18-gauge needle. Insert the needle through the *X* mark in the rubber stopper; *not through either of the free holes.*

(b) Inoculate each of three tubes of Brewer's medium with 5 c.c. of plasma.

(c) The remainder of the plasma may be used for protein determination.

(d) Immediately after the cultures have been planted, the same syringe can be used to add 1 c.c. of 1% solution of merthiolate for each 100 c.c. of plasma diluent. The merthiolate is added through the *X* mark in the rubber stopper. The final concentration of merthiolate will be 1-10,000.

(e) The merthiolate is prepared by adding 1 gram of merthiolate and 1.4 grams of borax to 100 c.c. of sterile pyrogen-free distilled water in a sterile container. The use of borax is desirable to maintain optimum alkalinity. The 1% merthiolate solution should be freshly prepared every 30 days.

(f) The cultures are placed in the incubator at 37° C. and observed for ten days.

(g) If one of the three culture tubes shows growth at any time, the pool must be recultured. If the subsequent cultures are negative the pool may be used. If more than one culture tube shows growth after the first plant the pool must be discarded. If one tube or more of a second series of cultures from the same pool shows growth, the pool must be discarded.

7. *Transfer of Plasma from Pool to Final Storage and Dispensing Bottle*

If the cultures show no growth after incubation for ten days or longer, the plasma is ready for transfer to final storage containers.

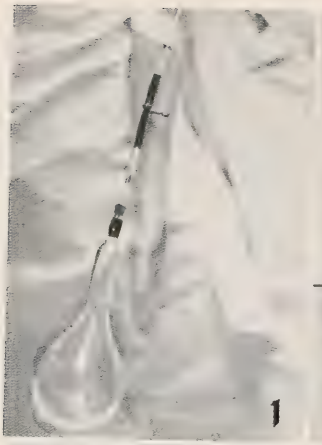
A. *Preparation of the pooling bottle for aspiration*

(a) Take care not to disturb any sediment which may have formed.

(b) Apply a liberal coating of 7% tincture of iodine to the rubber stopper of the pool bottle and allow it to act for at least one minute.

B. *Preparation of final storage containers*

It is essential to preserve plasma in a diluent to minimize fibrin formation. Diluents containing dextrose seem to be most satisfactory. Experimental work has clearly indicated that dilute plasma has certain advantages over concentrated



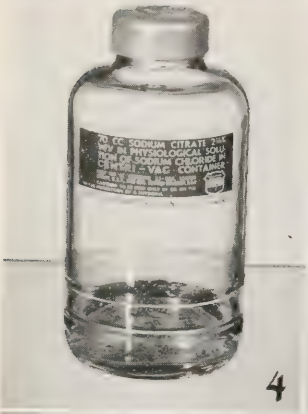
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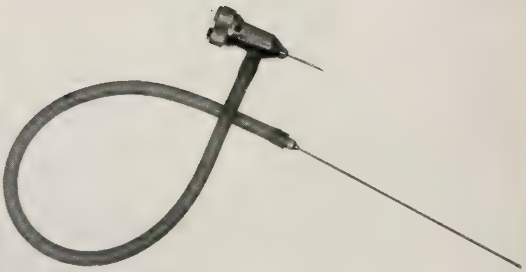
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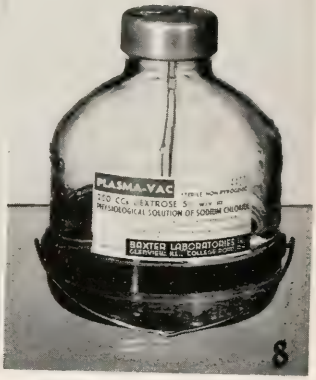
5


BAXTER PLASMA-VAC

6



7


PLASMA-VAC
BAXTER LABORATORIES

8

1. Bottle first Devised for Author's Technique of Transfusion of Blood and Plasma.
2. First Modification of Original Bottle.
3. Second Modification of Original Bottle.
4. Bottle Now Being Used by Author.
5. Transfer Set.
6. Baxter Laboratories Plasma-Vac Without Anti-Coagulant.
7. Baxter Laboratories Stainless-Steel Filter.
8. Baxter Laboratories Plasma-Vac with Dextrose in Salt Solution

plasma. Approximately isotonic plasma, which can be followed by dextrose and salt solution, probably has the advantage over dilute plasma in that it can be administered in half the time. This is of importance in cases of desperate shock in which the quickest possible restoration of blood volume is essential. Two final storage bottles have been found satisfactory. One 300-c.c. bottle contains 25 c.c. of 50% dextrose in distilled water. A second 600-c.c. bottle contains 250 c.c. of 5% dextrose in physiologic salt solution.

(a) Remove the aluminum cap and first rubber diaphragm from 300-c.c. Centri-Vac (figure 3) containing 25 c.c. of 50% dextrose in distilled water or 600 c.c. Plasma-Vac (figure 8) containing 250 c.c. of 5% dextrose in salt solution.

(b) Apply a liberal coating of 7% tincture of iodine and allow to act for one minute.

C. *Aspirating plasma from pool to final container*

(a) Unpack a sterile filter set, remove the protecting rubber-stoppered glass vial from the needle and insert the needle through the large free hole in the rubber stopper of the pool bottle. Remove the needle and insert it through the *X* mark in the rubber stopper. Do not insert the needle in a free hole connected with an air tube.

(b) Unpack a sterile transfer set (figure 5) consisting of a donor valve connected to a 9″ aspirating needle by a length of rubber tubing, and close the valve.

(c) Insert the valve needle through the *X* mark of a Plasma-Vac or Centri-Vac containing a diluent.

(d) Insert the aspirating needle through punctured stopper of the pool bottle well below the surface of the plasma.

(e) Open the valve and aspirate plasma from the pool bottle into the storage container. When the container is filled close the valve, remove it from the stopper of the first bottle and immediately insert it through the *X* mark of the next bottle. Continue until all of the plasma has been aspirated into final storage containers. The last bottle may contain a large quantity of sediment which has precipitated from the undiluted plasma in the pool bottle and sedimented during the storage period. The last bottle may be centrifuged if necessary and the clear supernatant plasma transferred to another bottle.

(f) Prepare the last bottle filled from the pool and remove 15 c.c. of plasma. Inoculate each of 3 tubes of Brewer's medium and incubate. If the cultures are negative after ten days, the plasma is ready for use or storage. If the cultures show growth, each bottle prepared from that pool must be cultured in Brewer's medium. If the cultures show no growth the plasma can be used. If the cultures are positive the plasma must be discarded. Absence of growth in the final storage bottle negates the previous positive cultures.

8. *Preservation of Plasma*

Liquid plasma may be preserved at room temperature, at refrigerator temperature, or in the frozen state. If short storage is contemplated preservation at room or refrigerator temperature is satisfactory, and plasma can be transported without special precautions to maintain constant temperature. If long storage is desired to maintain a reserve of plasma or for the preservation of immune bodies, plasma should be preserved in the frozen state. If facilities are not available in the institution where it is prepared, it can be stored in the freezing room of a local ice-cream plant.

Frozen plasma must be thawed in a water-bath at 37 to 40° C. Thawing at room temperature frequently will bring about a tremendous precipitation of fibrin.

A constant low-temperature refrigerator is not essential for the preservation of plasma. Preservation at temperatures above 10° C. is more desirable than preservation at 2-4° C., because fibrin formation will be less after use of the higher temperature. Storage at room temperature for 6 to 9 months is satisfactory and results in better preservation than storage at refrigerator temperature. Fibrin precipitation in liquid plasma is not predictable. It may occur relatively soon or not occur for several months. The presence of fibrin in liquid plasma does not make it unfit for use if a satisfactory filter is used in its administration.

9. *Administration of Plasma*

Plasma must be administered through a filter

The Baxter stainless steel 200-mesh filter (figure 7) has been found to meet every requirement.

Plasma is administered intravenously, intramuscularly, and into the sternum of patients over two years of age and through the long bones of babies under two years of age. Transfusion of blood plasma through the sternum and long bones has proved very satisfactory in our hands.

10. *Labeling*

The label should contain the following information:

Bottle No. ..... Pool No. .....
..... c.c. Plasma ..... c.c. Diluent
Kahn Test ..... Blood Group.....
Cultured ..... Result ....
Grams of Protein ..... Blood Equiv. .....
Merthiolate .....

11. *Preparation of Donor and Recipient Sets*

Practically all reactions resulting from plasma transfusions are due to pyrogens present in the sets or accessory solutions. Reactions can be largely eliminated by careful preparation of the donor and recipient sets.

A. *Donor Sets*

Donor sets must be cleaned immediately after use.

(1) Take the set apart and remove as much blood as possible by using a long stylet for the valve and needles and forcing water through with a syringe. Crush the rubber tubing to loosen all clots.

(2) Aspirate tap water (distilled water if available) through the valve and rubber tubing from a container used for this purpose only. This can be done by using a water suction pump or a large syringe.

(3) Soak in 2% hydrogen peroxide for 10 to 15 minutes and then wash thoroughly with tap or distilled water.

(4) Wash with 100 c.c. of sterile distilled water.

(5) Flush all parts with 100 c.c. of sterile salt solution and drain, but do not dry.

(6) Cut off ½" of each end of rubber tubing.

(7) Assemble the set making certain that all parts are tightly joined. Put a drop or two of glycerin on the valve stem and a drop on the valve threads. Assemble the valve but be certain that it is not closed. Put rubber-stoppered glass vials over the two needles.

(8) Wrap the set and sterilize in the autoclave within not more than 4 hours.

(9) If the set is not used again within a week, resterilize just before use.

B. *Recipient Sets*

(1) Remove the stainless steel filter, wash it well and soak in full-strength nitric acid for 30 minutes.

(2) Aspirate tap or preferably distilled water through the rest of the recipient set until it is clean.

(3) Wash the glass parts with soap and water.

(4) Boil rubber tubing and glass parts in 5½ sodium carbonate solution for 15 minutes.

(5) Wash in tap or distilled water until clean.

(6) Wash set with sterile distilled water.

(7) Wash the stainless-steel filter with sterile distilled water.

(8) Assemble the set, flush with several hundred c.c. of salt solution and drain but do not dry.

(9) Wrap and sterilize in the autoclave within 3 hours.

(10) If the set is not used within one week, resterilize.

THE TREATMENT OF TYPHOID AND DYSENTERY CARRIERS WITH SUCCINYLSULFATHIAZOLE

(W. M. M. Kirby & L. A. Rantz, San Francison, in *Jl. A. M. A.*, June 20th.)

Succinylsulfathiazole, 0.25 Gm. per kilogram, was administered to 11 persons—3 without evidence of disease, 3 typhoid carriers and 5 dysentery carriers—all of whom remained ambulatory throughout the course of treatment. The daily dose was divided into four portions, which were taken at 8 a. m. and 1, 6 and 11 p. m., and the duration of administration of the drug varied from five to 14 days.

The 3 typhoid carriers, all middle-aged women who refused to have their gallbladders removed, had been previously treated unsuccessfully with sulfaguanidine. With succinylsulfathiazole the results were equally unsatisfactory.

Succinylsulfathiazole has been found to produce a decided alteration of the physical characteristics and bacterial flora of the stools. It is only slightly absorbed from the gastrointestinal tract, producing blood levels of free sulfathiazole of less than 1 mg. per hundred c.c., and an average of less than 5% is excreted in the urine.

Dysentery bacilli disappeared from the stools of 5 carriers during succinylsulfathiazole administration and have remained absent for periods varying from 30 to 60 days.

The only reactions noted were a tendency to pass frequent, loose stools and to have slight perianal irritation.

Since it is only slightly absorbed into the blood stream, succinylsulfathiazole is much less likely than sulfaganidine to produce severe toxic reactions.

DEPARTMENTS

INSURANCE MEDICINE

H. F. Starr, M.D., *Editor*, Greensboro, N. C.

NOTE: The following article may be considered somewhat out of place in a column on Insurance Medicine, yet it deals with one phase of Preparedness, the only assurance this country has of surviving the present world catastrophe. —H. F. S.

MEDICAL PREPAREDNESS IN THE GRASS ROOTS

Local Civilian Defense organizations are being set up throughout the country and physicians are being called upon to head first-aid activities. If these first aid organizations are ever required to fulfil the essential functions for which they have been created it will be in an emergency, and there will be problems to deal with which are far different from those which the physician is accustomed to solving in normal peace-time practice. Having been appointed to head the first-aid activities of one of the local county districts, an attempt was made to provide an approved outline of procedure for the organization and operation of the first-aid activities for a typical district. As far as we have been able to determine there is no such official plan. Consequently a plan was evolved and put into effect in this district which might offer some suggestions helpful to others who have been assigned a similar task.

The procedure herein described was followed in District No. 20, Guilford County, North Carolina, which is the Sedgefield section—a suburban and rural area three or four miles square between High Point and Greensboro about seven miles southwest of Greensboro. The problem here is simple compared with that in some of the thickly populated or industrialized districts, yet it does present factors not common to purely rural districts. Each district will present its own problems but it is believed that they can best be solved by a systematic plan of approach.

Analysis of the District

Before attempting to form a general plan it is advisable to make a close analysis of the district and to determine just what it contains and whether there are special hazards or advantages present. A good map of the district is indispensable. The roads and their usefulness in evacuation of patients should be carefully considered as well as the possibility that they might create special problems. It is helpful to indicate on the map the distribution of the population, and of facilities which may be either useful in emergency or sources of danger. For example, in this district there are two fairly large rural schools, one for white and one for colored, three country churches, Sedgefield Inn and Golf Club, Pilot Life Insurance buildings, Guilford County Sanatorium, an Army post; and numerous suburban homes, farms and farmhouses. The main line of the Southern Railway and the very busy highway number 70 traverse the district and the north and south air route passes overhead. Large crowds of people seldom congregate in the district. The schools, churches, golf club and the Pilot buildings during the hours they are filled with people, and the Guilford County Sanatorium, are the only places where numerous casualties would be apt to occur at any one place. The highway and railway could possibly become military targets. Thus it will be seen that it is important to consider the possibilities presented by the district itself in formulating plans.

Red Cross First-Aid Courses

Civilians have enthusiastically joined the first-aid classes which are being conducted throughout the country. This should be encouraged, for with the growing shortage of civilian physicians trained laymen will become more and more necessary in the handling of large-scale emergencies. The number of civilians who should qualify for first aid depends upon the number of people in the district and the extent of the hazard present. In District No. 20 there are 28 persons who have completed the standard Red Cross first-aid course, most of whom have also completed the advanced course and four of whom have qualified as first-aid instructors. This number is considered sufficient to take care of any anticipated emergency in the district. The physicians in the district in addition to the author consist of the Medical Officer at the Army post, the Superintendent of the Guilford Sanatorium and two others who live only part time in the district, all of whom will serve in an emergency.

Anticipate Emergencies

Meeting with those qualified to render first aid, plans should be made for taking care of all emergencies that can be foreseen and which might occur in the district and to coördinate the first-aid plans with the rest of the civilian defense activities under the supervision of the air raid warden. Circumstances atendant upon an air raid should be visualized and planned for as far as practicable. Possibility of sabotage in its various forms should not be overlooked. In case of attempted invasion there may be a large number of persons from nearer our coast creating problems relating to food supply, sanitation and spread of disease. Movements of our own troops through the district under emergency conditions may become necessary, presenting special health problems to the residents of the district. Even an invasion by the enemy should not catch the first-aid organization entirely off guard

and without at least some tentative plans. Ordinarily the telephone is the logical means of communication within the district, but if the telephone is out of commission alternate means must be provided. In such an event, the plan in this district is to send necessary messages by auto or by the Boy Scouts who have volunteered for this service and will travel on bicycles or afoot. There are numerous saddle-horses in the district and the possibility of using them has not been overlooked. This matter of communications enabling each locality to keep in contact with the others is all important.

The transportation of wounded could become an extremely difficult problem. Normal facilities will be used if possible, but they may not be available in an emergency. Provision must be made for improvising truck ambulances, a description of which is given in a pamphlet published by the Red Cross. The possible use of passenger cars, stretchers, or the necessity for carrying patients should not be overlooked. If the normal water supply is broken instructions must be promptly and repeatedly given the population in regard to rendering drinking-water safe by boiling or other means. Destruction of the sewerage system would create a health problem requiring immediate attention. A community should not allow an epidemic, the frequent accompaniment of war, to break upon it and find it unprepared to establish emergency hospitals and take appropriate measures. The importance of vaccination, particularly against smallpox, typhoid and para-typhoid fever now should be impressed upon the population. Much of this work is normally taken care of by the City or County health department, but circumstances may arise in which the entire responsibility may temporarily fall upon the local district. Health departments can be depended upon to welcome such a program and coöperate to the fullest extent.

Morale and Enthusiasm of First Aid Workers

Persons who are sufficiently in earnest to enroll in a first-aid class and who have shown the fortitude and persistence necessary to complete the course and receive a certificate are apt to have a proper attitude toward the work, but maintenance of morale and enthusiasm among the first-aid workers should not be neglected. Any sub-groups formed should be based upon locality of residence, work, or upon some basis other than social status, and in planning the work care should be taken to see that proper provision is made for all regardless of race, color, creed or social position. The most unfortunate will require the most help. It is wise to have the members of the various groups elect their own leaders. Those engaged in first-aid work should scrupulously observe the rules laid down by the Air Raid Warden for the district and they should encourage others to do likewise. It is well to state to them that in an emergency first-aid work may be dangerous and will require courage of the highest order; but that any necessary risk of personal injury is worth taking, for rendering first aid is humanity and civilization at its best in action. Foolhardiness, however, must be discouraged and first-aid workers must be taught to take care of themselves and avoid unnecessary exposure to danger. Much can be done to prepare them psychologically for emergencies. The sounds of a bombardment are terrifying and confusing and it is well to stress the fact that noise alone injures no one. Fear is a normal human reaction under certain conditions but fear must not be allowed to control one's actions. Work is the best antidote to fear.

Medical Supplies

It is advisable to have a reasonable quantity and variety of supplies for any emergency, stored at at least two different convenient points in the district. Local Red Cross Chapters will coöperate in furnishing bandages and supplies. Encourage each family in the district to keep available a few simple supplies such as have been widely recommended—waterbuckets, axe, 50-foot rope, sandbags, garden hose and first-aid supplies.

Emergency Hospital

Tentative plans for the establishment of an emergency hospital in suitable quarters had best be made before the emergency occurs. In District No. 20 several suitable buildings have been designated, any one of which will be available in case of need.

Organization

All activities concerning civilian defense are under the supervision of the Aid Raid Warden who has one or more assistants. A division is subdivided into sectors each under a sector warden. First aid is only one of the activities and must be coördinated with the entire civilian defense program in the district. Close coöperation with the various units and with the Air Raid Warden is essential.

As recommended by the Red Cross, a complete first-aid unit consists of 15 to 50 persons, and is designated as a Medical Detachment. The Medical Detachment is divided into squads of five or more including a leader, preferably elected by the members of the squad. District No. 20 requires only one Medical Detachment. Some districts may require several, in which case a leader, preferably a physician, should head each Detachment.

From among the qualified first-aid workers in the district individuals have been appointed to study and develop the following phases of the first-aid program:

1. Communications
2. Transportation of Wounded
3. Rescue Work
4. Canteen
5. Supplies
6. Disease Prevention & Education of Public
7. Training in First Aid
8. Attendance at First Aid Meetings.

Meetings of all members of the Medical Detachment are to be held once a month for the purpose of continuing training and modifying or developing plans as necessity may require.

Conclusion

The plan used in organizing the Civilian Defense First-Aid Program in a mixed suburban and rural district in North Carolina has been described. Each district will present its own problems and requirements, but it is believed that an approach along the lines herein described will in some respects be useful in organizing most districts. If anyone thinks it unnecessary to prepare for such emergencies now, let him ask a citizen of England or any of the invaded countries.

GENERAL PRACTICE

James L. Hamner, M.D., *Editor,* Mannboro, Va.

THE TREATMENT OF URINARY TRACT INFECTIONS OF PREGNANCY

Pyelonephritis is one of the most common of the complications of pregnancy, estimated as 2 per cent. In attempting to combat urinary infections during pregnancy, each new therapeutic agent has been utilized in turn. Sulfanilamide and its derivatives have been proved to have no adverse effects on pregnancy or fetus.

Heldfond reports[1] 145 cases which were treated with mandelic acid, methenamine, sulfanilamide, sulfapyridine and sulfathiazole. Results obtained with the various forms of treatment were determined by comparing the number of hospital days, the character of the urine on discharge, the number of days required for the temperature to reach normal, and the presence or absence of recurrences in fever or symptoms. For the entire series, the number of hospital days averaged 10 in antepartum and 13 in the postpartum cases. In 83 cases the temperature reached normal in 4 days or less. In only 27 cases was there a recurrence of fever.

The results indicate a distinct superiority of the sulfonamide drugs in the treatment of pyelonephritis of pregnancy. The poorest results were obtained with methanamine. In 25 per cent of the cases other drugs were substituted before satisfactory results were obtained. There was a recurrence of fever in 25 pe rcent of the cases. Over 50 per cnt of the urines on discharge were infected. The average hospital stay was more than 10 days. The only apparent advantages of methanamine were the absence of toxic symptoms and that ambulatory patients could use it.

The results with mandelic acid were somewhat less disappointing. Substitution therapy was necessary in 30 per cent of the cases in which *B. coli* was the offending organism., but no substitution therapy was required in either of the other two groups. There was recurrence of fever in 25 per cent of the cases. The average hospital stay was 10 days. Over 50 per cent of the urines on discharge were clear. The fact that fluids must be limited with mandelic acid in treating a condition in which the forcing of fluids is indicated more than overshadows the only possible advantage it may have, namely, absence of toxic symptoms with its use.

The results with the sulfonamide derivatives were uniformly satisfactory. Sulfapyridine was slightly less effective than the others. In 10 per cent of the cases sulfanilamide was substituted for it. There was a recurrence of fever in 25 per cent of the cases. The average hospital stay was less than 10 days. The urines showed infection in one-third of the cases on discharge. The main disadvantage of its use was the very frequent occurrence of nausea and vomiting, and rarely, hematuria.

The results with sulfanilamide were slightly better than with sulfapyridine. Only 15 per cent needed substitution therapy. The average hospital stay was less than 10 days. Over 80 per cent of the urines were clear on discharge. There was recurrence of fever in only 3 per cent of the cases. Sulfanilamide rarely produced nausea and vomiting in the small doses used. Cyanosis was a common finding but had no bad effect. In a few instances, mild anemia and mild agranulocytosis occurred.

By far the best results were obtained with sulfathiazole. In no instance did the medication require substitution, nor was there any recurrence of fever in any case. The hospital stay averaged less than 10 days. Over 80 per cent of the urines were clear on discharge. Nausea and vomiting were encountered very rarely and cyanosis was not present. In no case was there an appreciable resultant anemia or agranulocytosis. Occasionally sulfathiazole crystals were discovered in the urine, but no ill effects could be attributed to them.

In the entire series there was one death. Mandelic acid, sulfanilamide ureteral catheterizations were all used with no good results. Autopsy revealed multiple cortical abscesses of the kidney.

1. Alfred Heldfond, in *Western Journal of Surgery, Obstetrics & Gynecology,* 50: 82, 1942

PEPTIC ULCER

EPIGASTRIC PAIN coming on 30 to 90 minutes after a meal and accompanied by vomiting are the chief symptoms of *gastric* ulcer. In about a fourth of the cases blood appears in the vomitus.

In *duodenal* ulcer, pain occurs usually from two to three hours after a meal, that is, when the stomach is nearly empty, therefore earlier after a light than after a heavy meal. The pain is relieved by taking food.

It is generally agreed that the main factor in the development of gastric and of duodenal ulcer is the action of the pepsin and hydrochloric acid of the gastric juice. The term peptic ulcer is therefore well chosen.

A more liberal diet is now being given in cases of peptic ulcer, even when bleeding, and with a bettering of results.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

THE PREDOMINATING SUBJECTIVE SYMPTOM IN ROUTINE OPHTHALMIC PRACTICE

IF I WERE ASKED what subjective symptom predominates the routine history of the majority of patients who apply for an eye examination the answer would be headache; though this viewpoint controverts somewhat the opinions of more than one of the great masters in ophthalmology my position is based upon an analysis of the histories of my patients over a period of 22 years in ophthalmic practice in which this symptom heads the list in the patient's resumé of his own sensations. A further analysis of this statement is necessary for a better understanding of its meaning.

In the first place discomfort or pain of any degree in the language of the layman, if in the area of the accessory sinuses, the skull, within or around the eye or the neck constitutes a headache, and in the majority the cause is assumed to be an eye problem which glasses will solve. In the second place a careful analysis of the location, type, degree, incidence and cause of the headache rests upon the oculist who must determine whether he is dealing with an organic or a functional headache; who must fully investigate the status of the eyes, the habits of the individual, his diet, type and hours of work, lighting facilities, emotional trends and general physical condition. When all such factors, and many others productive of headache, have been investigated without disclosing anything to assign as a cause for this subjective symptom, the so-called habit headache is worth considering, especially in the adult with an unstable nervous system and in the adolescent.

Now the third problem in this discussion will bear consideration bear consideration and it is truly a problem for the oculist to attempt to solve. By many and devious ways the public has been taught to believe that most if not all headaches are in some way connected with or caused by some eye condition and most probably by a refractive error, which to his conception is eyestrain requiring glasses for relief. In such persons in whom this viewpoint has become fixed the oculist finds it one of his major difficulties to persuade the patient that glasses are not indicated. I have known some of these patients who later had glasses prescribed for them using as little as an ⅛ or a ¼ diopter of a sphere who claimed relief of headache. To my conception the relief obtained from such a measure was purely psychic or the headache was due to some other cause which corrected itself or was corrected by some other means coincidental with the use of the glasses. This is based upon the premise that patients who have high refractive errors, especially of the simple type, with all other function of the eyes normal and the general physical condition and habits of living good seldom give headaches as their main symptom, but rather fatiguability of the eyes, smarting of the lids, and blurred vision. Many of these people have had a moderate or marked defect in vision for years without knowing it, or once having had a headache or any symptom relevant thereto and, in the main, apply for an eye examination because the defect in vision had been in some way brought to their attention. Further, experience has proved to the writer that healthy children and healthy adults with clean habits up to 40-42 years of age are seldom conscious of whatever effect 1 to 1½ diopters of a simple refractive error may have upon their visual efficiency. Even a combined error of a like degree with the astigmatic portion less than ¾ of a diopter is seldom productive of headache under like circumstances. Should headache be a prominent symptom with such a measure of refractive error glasses may be prescribed to correct the error, but this should not be the all-inclusive treatment. All other possible causes relevant to the eyes and general physical condition require a thorough analysis. If this be done and the results noted time will prove that 60 to 70% of functional headaches are not due to eye strain the result of refractive errors, as has been taught for these many years.

COTTON SUTURE MATERIAL

(A. W. Allen, in *New England Jl. of Med.*)

Cotton thread is a *better* material for ligatures and sutures than silk or catgut, as shown by is use in a wide variety of conditions during the last six months at the

Massachusetts General Hospital. Cotton is easier to handle than silk, since it is slightly rougher and the knot is more easily set; also, the unused portions do not stick to the glove as do those of silk. Wound on rubber tubing, the shrinkage that occurs when it is boiled compresses the tubing slightly and does not weaken the fibers. In corresponding sizes, it is stronger than unwaxed silk. It is well tolerated in the tissues and is not extruded even in septic wounds. The sizes most useful are Nos. 30, 40 and 60. It should be used instead of silk for ligatures and interrupted sutures. Quilting cotton is superior to ordinary cotton thread.

SURGERY

Geo. H. Bunch, M. D., *Editor*, Columbia, S. C.

LINITIS PLASTICA—LEATHER-BOTTLE STOMACH

Diffusely infiltrating small-cell radio-resistant cancer of the stomach presents problems in pathology, diagnosis and therapy which are of particular interest to the surgeon. Without discrete tumor-formation the stomach wall throughout is an inch or more thick and of almost cartilagious consistency from chronic fibrosis and induration. Although the disease may begin at the pylorus, as it extends the whole stomach becomes contracted and the lumen constricted. The stomach may be reduced from 12 inches to four in length and from 40 ounces to four in capacity. It becomes a rigid tube which in thin patients may be felt lying transversely in the epigastrium.

Describing the condition first in 1854 Brinton called it linitis plastica. It is also known as leather-bottle stomach and as cirrhosis of the stomach. At first thought to be of syphilitic or infectious origin, it is now, in cases that have had follow-up study by clinicians and pathologists, found to be always cancerous. Ewing describes it as a peculiar form of gastric carcinoma, occurring in subjects who are probably resistant, and originating from cells of limited growth capacity, which pursues a chronic course and tends to spontaneous regression of the tumor process, but which eventually causes the death of the patient. He says every case of hypertrophic pyloric stenosis and diffuse cirrhosis of the stomach in adults is atypical fibrocarcinoma. Boyd says the carcinomatous cells are usually few so that many sections may have to be examined before these cells are found. Without cancer cells having been found in the tissue removed at operation, Lyons in 1923 found carcinoma in six patients at autopsy, who had survived gastric resection at the Mayo Clinic for linitis plastica.

Because of loss of stomach capacity food has to be taken in small quantities and often. There is loss of appetite, nausea and progressive emaciation. Bleeding from the stomach is rare for there is no tendency to ulcertation and the mucosal blood supply is lessened by fibrosis. It is a disease of adult life. Although involving the whole stomach it shows no tendency to extend beyond the pylorus or into the esophagus. It metastasises slowly.

When a leather-bottle stomach is found at operation the surgeon has to choose between leaving the patient to the unhappy fate of gradual decline from a progressively obstructing, low-grade chronic cancer of the stomach; and subjecting him to the hazards of total gastrectomy—a heroic procedure which at this time has an almost prohibitive operative mortality rate even in the hands of the most experienced and skilled surgeons.

Neither partial resection, gastroenterostomy nor jejunostomy is curative, and as palliative measures the three are of doubtful benefit. Before any type of high gastric resection is begun the surgeon should be sure that the patient's mesentery is not congenitally too short to permit approximation of the jejunum to the gastric or esophageal stump for anastomosis. Linitis plastica is the most common indication for total gastrectomy.

ANTISEPTICS IN WAR WOUNDS

Acetic Acid an Antiseptic

Infection by *Bacillus pyocyaneus* is a common infection and it is not generally known that there is only one antiseptic that will control it—namely, a 1% solution of acetic acid—but this has no action on other organisms which may be present as part of a mixed infection.[1] This is news indeed to the editor and to all others consulted on the point. The information is very welcome for a *B. pyocaneus* infection is prone to persist for a long time and require an autogenous vaccine for its cure; and acetic acid is cheap and readily obtainable. It will certainly be used here, and in the hope that our *B. pyocaneus* will be found as vulnerable to very dilute vinegar as his cousin (or brother) on the other side of the world.

This Sydney surgeon has had a large experience with the use of various antiseptics in cases of war wounds. He goes on to state the definite conclusions at which he has arrived.

Our old friends, oxidizing substances such as peroxide of hydrogen and permanganate of potash, separately or in combination, have their greatest use in wounds infected with anaerobic organisms. Iodine is of value only on the skin, as wound exudates render it inert and it is also toxic to the tissues.

Mercurial preparations other than the recently introduced Metaphen, Merthiolate and phenyl mercuric nitrate, are dangerous, since to be effec-

1. H. R. G. Poate, Sydney, in *Australia & New Zealand Jl. of Surg.*, April.

tive they must be used in such concentration and quantity as to gravely damage living tissues, and it seems that even the exceptions named are of greatest use on unbroken skin.

The aniline dyes, although bactericidal, are toxic to the tissues to a slight extent, but are slow in action and inhibited by wound exudates.

The flavine group for the antiseptic treatment of wounds are quick in action, highly bactericidal and have no deleterious effect on the tissues, other than perhaps the inhibition of epithelialization if their use is continued overlong. Wound exudates or blood do not retard their activity.

Antiseptics have a place in the treatment of wounds, but their use requires careful consideration and discriminating application. They can never replace immediate debridement and excision of recent wounds, but when infection is likely or has become established, they can be of immense value if properly used.

THERAPEUTICS

J. F. Nash, M. D., *Editor*, Saint Pauls, N. C.

THE MANAGEMENT OF DEPRESSIONS AS SEEN IN GENERAL PRACTICE

In vain may a family doctor look through textbooks for much help in the management of cases of mental illness that develop among his patients. Here is abstracted a rare article[1] which promises to be of great helpfulness to him in the successful handling of the great majority of such illnesses at home—the prevention of suicide, keeping his patients from losing their jobs and their family and community standing.

In mild depressed states the patients are subjected to rebuke for their complaints instead of sympathetic consideration. This disease is among the most common in medicine and one of the greatest burdens to the physician. With proper management the recovery rate is practically 100% and recovery is complete in every respect; 95% of the suicides occur among these patients. They should receive just as much skilled care as we give a patient with pneumonia.

The very common simple depressions are most often thought of as either a psychoneurosis or a simple worry syndrome. A psychoneurosis is not caused by pathological tissue change, but a reactive state motivated by some situation that is unsatisfactory to the patient and is actively going on at the moment, and, therefore, will continue until the situation ceases to exist, or ceases to be distasteful. Thus treatment (psychotherapeutic measures) must be active and directed toward removing the cause.

A depression is an episode of illness in a previously healthy person. This basis for the symptoms comes from within as a result of illness, and not in any sense are they due to external factors, situations, conflicts and sources of worry.

A psychoneurosis will promptly respond to suggestion, persuasion and encouragement; but a depression represents an episode of fixed illness in the same sense that fever is fixed, and will not immediately respond to anything that is done. Often economic reverses are the primary cause of worry; yet restoration of satisfactory economic conditions will not influence the illness. The simple depression develops in perviously well adjusted, happy people and lasts only a few months. A psychoneurosis more often presents physical complaints, while the depression's symptoms are concerned largely with a general feeling of sadness. There may be a history of a similar episode many years before or even an attack of mild elation or excitement.

Things he formerly enjoyed he no longer likes. He has to drive himself to do everything. It takes him longer to do simple tasks. He is weak and easily exhausted. He has no appetite and can't sleep. He is constantly preoccupied with what is happening to himself and can't divert his attention to anything else. He feels that life is a burden and not worth living, and careful questioning nearly always brings out thoughts of suicide.

Many have treated such patients with ovarian hormones, and have seen them recover, but we must not forget that this disease recovers spontaneously, and with any form of treatment, provided the patient is supported and does not fall a victim of suicide.

After an average of a few months, the individual will be just as capable as before the illness, and if there is no history of a previous attack we need not expect recurrences; 50% of the manic-depressive type do not recur, and the probability is less in the other types of depression. A change in occupation is not to be advised. On occasions patients are discharged from good jobs because of a single attack of depression. It is our responsibility to correct such misinformation through educational measures.

Ninety-five per cent of all suicides occur in this group of conditions. Every depressed patient must be considered a potential suicide. A person who talks of suicide is apt to commit the act. Once a genuine attempt has been made no further chance should be taken, and such a patient should be hospitalized immediately. If a patient shows agitation, or expresses guilt feelings, or a need to be punished for supposed sins or crinminal acts, he

1. T. H. Harris, Galveston, in *Jl. Okla. Med. Asso.*, June.

should be considered suicidal. This is emphatically true of the patient who feels that he is a burden to his family. Patients often commit suicide in order for their family to obtain life insurance. *When a depression suddenly improves it often means that a decision to commit suicide has been reached and with the issue settled, the tension lessens.* Most of these patients if questioned in an understanding way will admit suicidal desires.

If it is determined that there is no danger of suicide, and since the illness is self-limited and recovery is spontaneous, then treatment amounts to supporting the patient an dseeing that he get adequate nutrition and rest, encouragement and sympathy. If a patient is told that he will certainly recover, but that a few months of treatment will be required, then confidence is established, and the patient will not go from physician to physician looking for help. Explain to the patient that he is sick and that you understand thoroughly that control of his symptoms is beyond any effort that he himself can make.

See that relatives do not deride and nag because he won't quit his "silly worrying." Tonic injections at the office will keep the patient under supervision, where encouragement can be offered, and his physical health improved. Sleep can be helped by barbiturates. Diversion is helpful; however such patients will not take part in any activity unless forced or led by a suitable companion or relative. Encourage, try to understand, sympathize, establish confidence on the part of such a patient. It is not helpful to try to discover hidden conflicts and try to establish a relationship between these and the disease. In the case of psychoneurosis, trying to alter the relationship between the patient and his situation is the chief approach to therapy; but in the case of the depressions we are concerned with an episode of illness which recovers spontaneously, with the patient returning to his normal way of feeling and thinking.

With shock therapy 80-85% of these patients recover in a short time; yet we do not want to subject a patient to this drastic treatment if it can be safely avoided. The electro-shock method is less hazardous, more agreeable and gets better results than does either metrazol or insulin.

Circumstances indicating a need for this form of treatment are suicidal tendencies; depressions that linger for month; extreme agitation; involutional depression; patients who for various reasons need to be hospitalized, but lack of money makes it necessary to get the patient well as quickly as possible.

From mil ddepressions, which make up the great majority, patients recover regardless of what we do or fail to do. The important thing is to understand, not to be annoyed by the failure of our treatment to influence the course of the disease, and yet to be able to assure the patient and the family that recovery will take place, watch for evidence of suicidal thoughts, and above all, appreciate the fact that we are treating an episode type of disorder, and that after having had such an illness a person is just as able to carry on in his life work as before.

ARTHRITIS

Wonderful claims for any fancy regimen as a cure for arthritis have waned by at least 75 per cent in the past dozen years. Here is the substance of a straightforward article[1] on the subject.

Rheumatoid arthritis, degenerative arthritis and gout are the three types discussed. Rheumatoid, atrophic, proliferative or chronic infectious arthritis, the most important type, the kind that may lead to serious joint destruction and crippling, is a disease of early adult life although it may occur at any age. It is a generalized disease, with weight loss, excessive fatigue, anemia and fever frequently. Women are oftener afflicted than men. Its cause is unknown but, in susceptible individuals, it seems to be precipitated by overwork, exposure to cold and dampness, and by infections. The involved joints are usually swollen, tender and warm. In a typical case, the joints are symmetrically involved on the two sides of the body. Joints in the middle of the fingers and the wrist joints. Muscle atrophy about the joints is often pronounced. After several months, x-rays often show narrowing of the joint spaces and some destruction of the joint surfaces.

Treatment aims to restore the general health to the best possible status, prevent stiffness and deformity.

The patient should be informed that the treatment may be long, and that the results depend on his coöperation and perseverance.

Complete bed rest for months may be required; in milder cases 9-10 hours sleep at night with a daily nap will suffice. The patient should not at any time feel a sense of fatigue. Quite comparable to the treatment of tuberculosis.

Meat, milk, fresh fruit and vegetables daily. Vitamins may be added to insure optimum nutrition. Plain cod liver oil, 2-3 ounces a day, is often of assistance in inducing a gain in weight.

Drugs are of secondary importance. Relieving pain 8 to 12 five-grain aspirin tablets daily for long periods with no deleterious effects. Iron is useful for anemia and various sedatives to promote needed rest. Cinchopen is dangerous and should not be used.

During the period of acute inflammation splints and casts provide relief from pain and spasm and

1. F. B. Cutts, in *R. I. Med. Jl.*, June.

help to prevent deformity. However the fullest possible joint motion at the earliest possible period in the disease is necessary, at least once a day. As the acute inflammation begins to subside local heat is of value. Massage and graded exercises. The arthritic patient who lies immobile in bed with pillows under his knees and with his hands flexed across his abdomen may be temporarily comfortable, but he runs a very serious risk of being permanently crippled.

Removal of foci of infection very rarely has any beneficial influence on the course of rheumatoid arthritis.

Gold preparations, it is too early to pass judgment.

One-fourth of the patients with this disease show no definite improvement, one-half improve slightly or moderately, in one-fourth improvement approaches a cure.

The second type degenerative arthritis—hypertrophic and osteo-arthritis. Patients not often so disabled as to merit hospitalization.

The cause appears to be the degenerative changes resulting from prolonged use or abuse of hereditarily weak joint cartilage, usually occurs in patients beyond the age of 40, otherwise in excellent health, although often overweight, signs of joint inflammation are minimal. The weight-bearing joints, particularly the knees. Heberden's nodes involving the joints of the fingers nearest the nails.

Unless the hips are much involved, serious disability almost never results. Lessen the burden on the involved joints; weight reduction for the obese, moderation in the use of the joint, and the improvement of weight-bearing lines by attention to the feet. Heat and massage to nearby muscles often relieve. Temporary use of some form of support such as properly applied elastic bandages. If the hips are greatly damaged, reconstructive operations with vitallium cups may be considered.

Gout—90% of cases occur in men, more commonly after the age of 40. At varying intervals attacks of acute joint inflammation, usually with severe pain. Between attacks, joints are free from symptoms. As the disease progresses tophi may appear in the cartilage of the ear, in bursae, especially at the elbow, and in or near the involved joints. Needle-shaped sodium urate crystals from a tophus positively diagnose gout. Serum uric acid over 6 mg. per 100 c.c. during an acute attack. Leukemia and uremia may show increase of uric acid.

Treatment—Heat or cold; colchicine, 1/120th grain, q.1h., until diarrhea occurs and then stopped. This may take from 10-25 tablets. Striking relief from pain will occur within 48 hours and the acute attack is over.

Between attacks a low-purine diet. Avoidance of glandular meats, beans, coffee and chocolate. The use of alcohol is likely to precipitate fresh attacks.

PUBLIC HEALTH

N. Thomas Ennett, M.D., *Editor*, Greenville, N. C.

MILESTONES IN NORTH CAROLINA PUBLIC HEALTH

(Continued from last month)

1921—A bill was introduced in this session of the General Assembly under the initiative of Hon. Emmet H. Bellamy requiring a physical examination of all applicants for marriage and making issuance of license contingent upon the physical qualifications of the applicant.

The Bureau of Venereal Diseases was combined with and made a part of the work of the Bureau of Epidemiology. Funds available for the year included: state appropriation, $275,000; miscellaneous receipts, $164,184.42; total, $439,-124.42.

1922—In order to bring the records of this department into harmony with those of other state departments, in accordance with the Act of the General Assembly of 1921, changing the fiscal year of the state so as to begin on July 1st each year, this report ends with June 30th, 1922. The Bureau of Public Health Nursing and Infant Hygiene was reorganized April 1st as the Bureau of Maternity and Infancy, for its maintenance the state receiving $27,259.66 annually from the United States Government in accordance with the Sheppard-Towner Act for the promotion of the welfare of mothers and infants. Dr. K. P. B. Bonner, of Morehead City, was appointed Director of the reorganized bureau.

1923—The General Assembly of 1923 enacted some important and far-reaching legislation affecting public health work in North Carolina. The most important legislation enacted this year was the act providing for an independent board of directors for the State Sanatorium for Tuberculosis, removing the direction of the institution from the authority of the State Board of Health. Facilities were also provided at the State Sanatorium for the confinement, care and treatment of tuberculous convicts. Other legislation included the act to provide for the sanitary manufacture of bedding, the

latter act to be enforced by the State Board of Health. The Bureau of Epidemiology was again combined with the Bureau of Vital Statistics.

On March 1st Dr. G. M. Cooper was made Assistant Secretary of the State Board of Health.

In order to experiment with the plan of District Health work, an effort was made to place responsibility for all State Board of Health activities under the direction of District directors attached to the staff of the State Board of Health. This effort was continued throughout the year, but proved to be ineffective and unsatisfactory.

In June Dr. J. S. Mitchener resigned as Director of the Bureau of Medical Inspection of Schools and Dr. Roy C. Mitchell, who had been doing some special educational field work for the Board temporarily succeded Dr. Mitchener.

Early in 1923 Dr. W. S. Rankin, State Health Officer, was invited by the Committee of Municipal Health Department Practice of the American Public Health Association to become field director for the committee in making a study of municipal health practices in the United States. The Board granted to the Secretary one year's leave of absence, but requested him at the same time to continue in touch as executive officer of the Board with the work of the Board.

On November 1st Dr. Rankin assumed his duties and established official headquarter in New York City for the work of the committee.

The general organization of the executive staff of the Board was continued with the Assistant Secretary, Dr. G. M. Cooper, as official head of the staff. During the year a plan for the more adequate sanitary control of public milk supplies in the state was formulated. Several changes in personnel took place this year. Dr. M. L. Iseley, who had been employed in county health department work, and Dr. Roy C. Mitchell resigned.

(To be continued)

PNEUMONIA IN A RURAL PRACTICE

(E. J. Simons, Swanville, Minn., in *Jl. A. M. A.*, June 20th.)

Only 80 cases of pneumonia were found in rural practice in 4½ years prior to pneumococcus typing of all suspected cases of pneumonia. Following establishment of a routine for the diagnosis of pneumonia which included typing, 117 cases of pneumonia were seen in the same rural practice during a similar period of 4½ years.

Results of the use of serum and chemotherapy are seen in lowered mortality from 16% in the 80 cases treated symptomatically to 4¼% in 117 cases treated after the advent of specific therapy.

It appears that the mortality of pneumonia in the average rural American community compares favorably with that of urban and teaching centers.

RHINO-OTO-LARYNGOLOGY

CLAY W. EVATT, M. D., *Editor*, Charleston, S. C.

ENCOURAGING RESULTS IN A STUDY OF EFFECT OF PROSTIGMIN ON TINNITUS

HEARING DISORDERS have long been among the most baffling problems of medicine[1]. Several papers cite the use of prostigmin in the treatment of deafness, tinnitus, vertigo and other symptoms related to malfunction of the auditory mechanism.

Despite the fact that there may be some question as to the accuracy of subjective data in regard to hearing acuity, a patient's declaration to the effect that ear noises have been diminished is a valuable statement. This diminution in tinnitus is probably the reason for a patient believing that he hears more acutely even though audiometric readings do not substantiate his statements.

No attempt was made to determine accurately the effect of prostigmin on hearing. The subjects selecting complained of tinnitus as their chief symptom and the study was limited to the effect of the drug on this symptom. Cases were selected regardless of the type of ear condition present, and among those treated were cases of nonsuppurative, healed suppuratve and perceptive ear diseases. Cases where the tinnitus was thought unrelated to the ear, such as disturbances of blood pressure, were not treated. Dosage schedule in general consisted of injections of 1:2,000 prostigmin bromide twice a week and three tablets of prostigmin bromide every other day; however, doses varied according to individual needs and response. Therapy would have been continued for a longer time in those cases showing no response had not circumstances beyond our control prevented further treatment.

Some patients obtained almost complete relief, while other were only partially helped. The improvement in several of the chronic cases was spectacular. One patient whose diagnosis is otosclerosis of many years' standing, had been treated in many clinics with no success and was finally referred for lip-reading instruction and hearing aid. However, tinnitus was so severe that the patient was depressed and talked of suicide unless she obtained relief. Under prostigmin her tinnitus was improved to such a degree that she believed her hearing to be better. Incidentally, this is the one case in the series where symptoms

1. H. D. Taterka, New York, in *The Laryngoscope*, April, 1942

would recur when treatment was stopped, and relief obtained only while getting prostigmin.

Many of the patients commented voluntarily about the improvement in hearing, but no attempt was made in this series to do audiometric studies.

Prostigmin has proven of definite value in the treatment of tinnitus as an otological symptom and merits further investigation. Twelve out of 21 patients were improved. In any case treatment should be considered for at least two months and in some cases longer. It may well be that more frequent injections, *i.e.*, three times a week, and oral doses of three tablets a day will prove of more benefit in the more stubborn cases. The effect on hearing, which was noted during treatment, also merits further study with accurate audiometric determinations. It is interesting to note that of the three cases diagnosed as otosclerosis, all reported improvement. While all patients were not helped, no other single remedy or combination of remedies has proven as satisfactory to the essayist.

TUBERCULOSIS

J. Donnelly, M. D., *Editor*, Charlotte, N. C.

USE OF THE BRONCHOSCOPE IN PULMONARY DISEASE

Bronchoscopic procedures in the presence of active pulmonary tuberculosis are still considered by many unnecessary, but some as contraindicated. Others use the bronchoscope only when symptoms and signs of tracheobronchial disease are present. Its use in the diagnosis of bronchogenic malignant tumors is general. In the case of pumonary abscess, bronchoscopic drainage of the abscess cavity is the most effective treatment we have.

In the June, 1942, issue of *Diseases of the Chest,* W. S. Conklin discusses 500 bronchoscopies, done primarily in the diagnosis and treatment of tuberculous tracheobronchitis. The author states that recent hemorrhage contraindicates the use of the bronchoscope, but the determination of the source of the bleeding may be of sufficient importance to outweigh the dangers.

Among 200 cases diagnosed as tuberculosis there were 15 in which bronchoscopy helped to prove the absence of significant tuberculous lesions. Eight of these had a nontuberculous bronchitis or peribronchitis, three had bronchogenic carcinoma, two had non-tuberculous bronchiectasis, one had metastatic pulmonary cancer, and one had Hodgkin's disease. In two other cases the bronchoscopic findings suggested pressure from tracheobronchial lymph nodes as the cause of the symptoms. Another case was that of a 46-year-old man who was admitted with a positive sputum. His x-ray film was not typical of tuberculosis, but it did show a small thin-walled cavity. A routine bronchoscopic examination revealed a small mass in the right, lower bronchus. A biopsy specimen showed epidermoid carcinoma. From several cases such as this the author argues for routine bronchoscopy.

Without the use of the bronchoscope tuberculous tracheobronchitis can only be guessed at; with the use of the instrument the diagnosis can be made or the condition excluded.

The author admits that a clinical diagnosis of tuberculous tracheobronchitis can be made frequently by: (1) Audible respiratory wheeze on auscultation in front of the open mouth; (2) substernal discomfort; (3) difficulty in raising sputum; (4) asthmatoid attacks, or dyspnea out of proportion to the pulmonary pathology; (5) varying fever; (6) cyanosis; (7) parasternal rhonchi; (8) signs of atelectasis or emphysema; (9) variation in daily sputum volume or bacilli content; (10) persistent or occasionally positive sputum in spite of well-controlled pulmonary lesions; (11) bronchographic evidence of bronchiectasis, bronchial stenosis or ulceration; (12) x-ray evidence of blocked or tension cavities; (13) atelectasis or emphysema as shown by x-ray examination; (14) hemoptysis, positive sputum or bronchogenic spread in the absence of pulmonary cavitation. However, in 40% of his positive cases no symptoms were complained of and 10% showed no suggestive physical or röntgenographic findings; while 25% of the negative cases had symptoms, and 50% of the negatives had one or more of the symptoms listed above. Tuberculous tracheobronchitis aggravates pulmonary tuberculosis, some reporting as high as 50% of deaths within one year after diagnosis of the condition.

This author's experience is that many patients with tuberculous tracheobronchitis respond well to treatment, but that the condition may predispose to empyema, brochiectasis, atelectasis, or bronchogenic spread. These patients, when at large, are dangerous tuberculosis carriers. Application through the bronchoscope of 10-25 per cent silver nitrate to the ulcerated areas is advocated; electrocoagulation is advised against because of its production of excessive scarring with resulting stenosis.

The author advises the routine use of bronchoscopic examinations in tuberculosis institutions in order that a better understanding of tuberculous tracheobronchitis may be obtained, and in order that the best form of treatment may be instituted promptly.

PEDICULOSIS—A NEW TREATMENT

(J. L. P. MacHaffie, in *Canadian Pub. Health Jl.*, Dec.)

The need is great for a quick, cheap, non-toxic, efficient remedy which can be applied in a few minutes to the heads of a whole family, a remedy that instantly kills both nits and lice.

We have used a 15% solution of lethane (n-butyl-carbitol-thiocyanate, No. 384 Special Concentrate) in purified kerosene. We apply the preparation by hand or with a fine fly-spray making sure that all the hairs are well soaked, especially near the roots. The patient is directed to keep the eyes close. All excess is removed from the ears, neck and forehead. Do not cover the head with a towel. Do not wash the head for several days. Fine-comb all dead nits from the hair as soon as possible; clean part of the head each day. One treatment kills lice and nits immediately. The cost per head is not more than 2 or 3 cents. No toxic or irritant effects have been observed.

OBSTETRICS

HENRY J. LANGSTON, M.D., *Editor*, Danville, Va.

ABORTION AND THE LAW

AN ARTICLE[1] by a Minnesota attorney constitutes an argument for change in our attitude toward abortion, and sounds warnings to well-intentioned doctors that, with the laws as they are, danger lies where they may not suspect it.

In Colorado recently a 12 year old girl found that she was about to become a mother as a result of an attack which had been made upon her. Two prominent physicians applied to the court for permission to perform an abortion. The judge ruled that he had no power to authorize such an act, but advised them to proceed since the state law permitted abortion under their diagnosis. The physicians refused to go ahead. They had no assurance of freedom from prosecution in case the child died. They knew it was no small matter to be found guilty of abortion. The statutes of most of our states sentence any person who performs an abortion not sanctioned by the law to serve from 1 to 10 years in the penitentiary. If the mother dies, he is guilty of murder in the second degree. Small wonder the doctors hesitated to entrust themselves to the quixotism of the law.

The fact that a physician's good faith and his honest belief that an abortion is imperative is no defense. The gist of the crime is the intent to perform an abortion other than that provided for by our legislatures. Purity of motive has been held no excuse in dozens of supreme court decisions.

For the tragedy and sordidness of the abortion picture in this country the chief responsibility rests on the laws against abortion.

A physician will generally tell you that our statutes allow therapeutic (legal) abortion whenever the mother's life, health, hearing, or eyesight is in danger. But if he were to examine the statutes of the 48 states, he would soon discover how blissful was his ignorance. In more than 30 states legal abortion is absolutely prohibited except where continuance of the pregnancy will jeopardize the mother's life. In eight more states the statutes seem to be just about as strict. In only three states —Colorado, Maryland, and New Mexico—is abortion permitted both where the mother's life and her health are in serious danger.

Mississippi's statute originally stated that all abortions were prohibited except to save the life of the mother, and when induced on the advice of a physician. A proofreader erred and the words "unless the same shall be necessary to preserve the life of the mother" were omitted. It is doubtful whether the supreme court of that state will allow itself to be influenced by the error.

Some legislatures through excess of zeal or ignorance of the meaning of the phrase have gone so far as to prohibit "premature deliveries." This means that in Alabama, South Carolina and Louisiana a physician who delivers any child before the normal period of pregnancy is over is guilty of abortion. Evidently overlooked was the fact that by abortion in the legal sense is meant the severance of the fetus from the mother before it is capable of independent existence. In *United States v. Hoffman*, therefore, the court sustained a conviction even though the child was born alive and in perfect health.

Are abortion statutes which can not be enforced of any value? Abortion convictions during the last 50 years have been almost non-existent. In contrast to the paucity of convictions is the extent of the practice. Medical authorities have fixed the number of abortions in America at from one to three millions per year. It is estimated that the city of Chicago alone accounts for 100,000 every year.

Although it is hard to see just what good the present crude abortion laws have accomplished, their evils rise to smite the eye. More than 8,000 mothers die each year because of the unskilled and unhygienic hands they seek to avoid a law that was supposedly created for their benefit. *The whole underground movement of abortion with its butchering quacks, midwives and incompetent doctors is the result of these statutes now in force.*

It is bad that American judges are not as outspoken as the English Justice McCardie. Some ten years ago in charging a prisoner guilty of abortion, he said:

"You are charged under an act that was passed 75 years ago. Since then the national point of view has been greatly changed . . . the law of abortion should be amended. The law as it stands does more harm than good . . . Very often mentally defective women or girls become pregnant either by another mental defective or by a normal man . . Those who allow such a child to be born are, in my opinion, guilty of a grave moral crime . . . miscarriages in such cases should be made compulsory.

1. Irvin Schermer, LL. B., Minneapolis, in *Jl-Lancet*, June

"I need not deal today with the numerous cases where women are utterly exhausted and worn out with child bearing, nor where exceptional cases may render the birth of a child undesirable. The question of . . . an amendment of the law of abortion must be looked at free from prejudice, whether theological or otherwise . . . The risk of abortion, if performed with proper surgical skill, is slight."

In the United States we have one death for every 75 abortion operations. In Russia, where abortion is legalized and under government control, there is one death for every 20,000 operations. With the prevailing standard of medical skill in our own country and a humanizing of our present law, we could better the Russian record.

The laws were passed to safeguard the morals of unmarried people, prevent population decreases and save the lives of mothers. Instead we find unmarried people resorting to contraceptives and no decrease in abortion. The picture of deaths from abortion in America is a reproach to a civilized nation.

Moreover, the law does not take into account the fact that the largest number of abortions are those performed on married women worn out with childbearing or unable to stand the expense of another child. Nor does it take into consideration the tragedies which occur in cases of pregnancy resulting from rape, incest or the copulation of imbeciles. What about the dilemma of a woman whose husband dies or deserts her shortly after she becomes pregnant?

There must be room for a doctor's honest discretion—flexibility is needed. Only completely legalized abortion can untangle the unhappy mess that 75 years of blind and inhuman legislation has created.

CARDIOLOGY

C. M. Gilmore, M.D., *Editor*, Greensboro, N. C.

DIGITALIS POISONING

Few of us have seen and recognized cases of digitalis poisoning. An article[1] which may well serve those of us who often prescribe this valuable drug is condensed herewith:

Digitalis owes its beneficial effect upon the circulation to the fact that it is a poison. When digitalis begins to act on the heart, the bowels, or the kidneys, the therapeutic stage is reached, and dosage much beyond this level enters into the toxic range. Many physicians are reluctant to continue medication with this drug to the full therasequence not of full value.

peutic stage, and much digitalis therapy is in con-

1. E. C. Chamberlain, Fort Lauderdale, in *Jl. Fla. Med. Asso.*, June.

Elderly persons are the ones who fancy themselves suffering from cardiac disease, and they know of digitalis. It can do no harm, they conclude; so take it on their initiative. As the toxic range is reached, they become confused as a result of this therapy—one of the earliest signs of slow digitalis poisoning. As judgment is impaired, the medication is continued until a real poisoning has occurred.

The geriatric patient does not tolerate well full dosage of digitalis. Myocardial fibrosis and impaired circulation to the conductive system are factors in the sensitization of the heart to the effects of digitalis.

It is useless to expect it to be of aid in fever, thyrotoxicosis and peripheral circulatory collapse; in shock and tachycardia due to severe infectious disease the drug may be detrimental.

Overdosage with digitalis causes nausea and vomiting preceded for a few days by anorexia, headache, vertigo and slow cerebration. The margin of safety between the therapeutic and toxic effects of digitalis is wide in the ambulatory patient, but in the patient with severe cardiac decompensation the margin may be narrow. Signs of overdosage are premature contractions, coupled rhythms, various degrees of auriculoventricular block, auriculoventricular nodal rhythm, pulsus alternans, paroxysmal tachycardia and auricular fibrillation. Acceleration of the pulse rate and the onset of auricular fibrillation, especially in children, should be borne in mind.

Other occasional effects are blurring of the vision with objects appearing green, yellow, white or lavender, diarrhea, reduction of the output of urine and acute psychopathic outbreaks.

A patient observed last winter:

A 71-year-old white woman was found unconscious by friends with whom she was staying, who knew nothing of her history. She had vomited in the bed, could not be aroused, or articulate clearly. A bottle of medicine, apparently tablets of digitalis folia, was found among her possessions bearing a label with directions for taking one tablet t.i.d. Examination gave no clue as to the condition from which she suffered. T. was 101, pulse 88 and the r. 24. The sugar content of the blood was 164 mg. per 100 c.c. The urine gave a 4-plus reaction for sugar, and the presence of acetone and diacetic acid was noted. Treatment was instituted for diabetic acidosis. By the next day the urine was free of sugar and acetone, and the sugar content of the blood was normal, but the pulse rate had dropped to 50. The patient remained unconscious. The heart was greatly enlarged with precordial pulsation, no murmurs; b.p. 180/100; peripheral vessels sclerotic.

On the second day the urinary output was diminishing, the respirations were of the Kussmaul type, and the patient could not be aroused. The np.-n content of the blood was 40 mg. per 100 c.c. Despite fluid by hypodermoclysis complete anuria was present for the 24 hours of the third hospital day. The administration of 2 c.c. of *depropanex* and 3 minus of 1:1000 adrenalin every two hours for four doses initiated diuresis, and soon afterward the patient became conscious.

For the next four weeks the patient was completely disoriented and for most of this time could not be left alone for a moment. During the second week she described her bed as having tan linen and the nurse as wearing a tan uniform.

After five weeks the patient, slightly confused mentally, was discharged from the hospital; pulse an average of 60. She now admitted the taking of three digitalis tablets a day over a long period of time, but was still unable to give even an estimate of the time involved.

The ecg. gave only slight evidence of the effect of the digitalis which was probably obscured to a considerable degree by the low voltage. It demonstrated the fact, however, that the effect of digitalis as shown in the ecg. is not quantitative.

DERMATOLOGY

For this issue Ray Noojin, M.D., Durham, N. C.

PRURITIS ANI

Pruritis ani tends to be a common, persistent, obstinate and embarrassing affection. The itching may be so intolerable as to completely prevent any degree of comfort or relaxation. Rest may be impossible. Males seem to be affected more frequently than females. The patient is usually one who lives a sedentary life.

The more common etiological principles are:

1. Protoplasmic unrest or nervous exhaustion producing localized pruritis.
2. The moisture and warmth of the anal region seem to encourage local fungus infection.
3. Local abnormalities including hemorrhoids, fissures, fistulae and neoplasms.
4. Intestinal parasites, particularly pinworms.
5. Contact dermatitis as may occur from use of local "pile remedy" medication or sulfite toilet tissue.

Etiotrophic therapy necessitates correct interpretation of the underlying cause of the pruritis. The patient with nervous exhaustion is usually easily recognized because of his ever-evident tension, restlessness, easy fatigability and over-activity. Local mycotic involvement may be established with the finding of fungi in scrapings made from the perianal area. Scales are placed upon a glass slide, cleared with 2-3 drops of 10% potassium hydroxide, covered with a cover-slip, flamed several times and examined microscopically. Local anal or rectal examination will rule out the possibility of hemorrhoids, fissures and fistulae. A proctoscopic examination is always indicated because of the possibility of neoplastic growth in the lower gastrointestinal tract. Careful stool examination as well as scrapings from the anal region should determine the presence of intestinal parasites. Contact dermatitis may be suggested from the history given by the patient. Patch tests with the suspected offending substances may prove of diagnostic value.

If the underlying cause is not ascertained, hospitalization is often necessary so that gastrointestinal, blood chemical and other studies may be carried out. Not infrequently, pruritis ani may be a manifestation of serious organic disease. A patient recently presented himself at Duke Hospital because of pruritis ani which was subsequently found to be due to perianal leukemic infiltration.

Local examination usually reveals evidence of excoriation because of scratching which at times produces small areas of lichenified dermatitis around the anus. Mild secondary infection and maceration are frequently present and may produce a white sodden appearance.

In most stages the tendency is to respond favorably to the following regimen:

1) Potassium permanganate 1:6000 sitz baths, 30 minutes twice daily. Occasionally in the acute eczematoid stage continuous wet compresses locally with the same solution are indicated.

2) Castellani's carbol-fuchsin resorcin paint should be applied locally twice daily following the sitz baths.

3) Calamine lotion containing 50% olive oil, ¼% menthol, ½% phenol should be sopped on three times daily and whenever necessary to control itching. (Calamine lotion without olive oil may irritate the anal mucosa because of its drying effect.)

4) Phenobarbital, 32 mgm., t.i.d.

5) No soap or water locally.

6) Toilet tissue should be moistened before using, after which olive oil, mineral oil, or cold creme should be applied locally. Local cleanliness is extremely important.

7) Scratching and rubbing must be avoided.

8) Bowel movements must be kept soft and regular with mineral oil.

The plan outlined usually affords relief in pruritis ani provided additional measures are carried out as indicated. In the neurogenic type it is well to make an attempt at slowing down the individual. Midday naps, sun baths, frequent vacations plus reëducation along the lines of a more restful way

of living are frequently helpful. Potassium permanganate and Castellani's paint are excellent fungicidal medicaments. Local surgical disease conditions should have appropriate treatment. Vermifugal therapy is necessary where intestinal parasites are found. In the cases due to contact with local applications, withdrawal of the offending substance is essential. The various analgesic preparations are frequent offenders.

If the case does not respond to this regimen carried out for several weeks, it will be well to consider the local use of röntgen therapy, alcohol injections, nerve division, mercury sulfide tattoo, or other technical procedure which are usually more safely carried out by one especially trained for treating this condition.

UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

THE PROBLEM OF SEMINAL EMISSIONS

INVOLUNTARY DISCHARGES of semen during sleep, with erotic dreams and erection, may recur so frequently as to make the affected person physically and mentally ill, and the usual treatment—medicating the seminal vesicles and adjacent structures—is all wrong, we may learn from a valuable contribution on a worrisome condition.

The bulk of urologists believe that the cause is an inflammation of the sexual parts.

Much more important is the mind factor.

So says Hirsch,[1] and he goes on to say further:

Young vigorous males who are thrilled by the mere companionship of a woman are often bothered by pollutions, and will exhibit physiological depletion much more often than those with less of the virile spark, and middle-aged bachelors are less inclined to envisage romantic episodes. Pollutions occurring once a week, or once a fortnight, are compatible with a stable nervous and sexual system.

The consensus of medical men has it that pollutions are normal and healthful, provided the individual is buoyant and refreshed after their occurrence—Nature's way of disposing of excessive sexual secretion.

How, then, are we to explain the nightly seminal pollution occurring in married men enjoying normal sexual relationship?

Physiological pollutions are the effects of continence. Substitute pollutions are the sort which take place if the sexual mate is not available. Psychic pollutions, either in the married or single man, usually are the effects of psychic stimuli which lie concealed in the unconscious. Pathological pollutions ensue when the sexual mechanism is set into riotous motion.

A state of terror traceable to the impressions left by reading about the atrocities of war can serve to weaken the inhibitors which guard the well-being of the mind. Why should one who is sad have his unconscious thoughts turn to sexual reverie? Utter exhaustion can induce unusual degrees of sexual appetite. During mental confusion psychic intoxicants can operate in like fashion.

To help the man who pleads for relief from seminal losses the physician must learn what goes on in the troubled mind. He has to be cognizant of the weaknesses in the patient's development. This is a painstaking, time-consuming task. We must learn how the patient's life has been colored by emotion and to what extent the emotional component has been repressed.

Inform the patient in all sincerity that he is not undergoing a sexual debility. Many of these disturbing conditions are the effects of apprehensiveness concerning needless loss of semen. The red herring of "excessive coitus" is still pulled out of the bag whenever it is necessary for the physician to have an alibi for medical incompetency. Inform the sufferer that semen losses do not damage the cells or ganglia of the nervous system.

The man must be made to realize that the sleeping period is not a state of narcosis, that when the watchmen of the body are given a rest, the mind can plan in an abandoned manner. Therefore, if the sleeping period is the only interval in which the individual can enjoy unrestricted psychic play, then it is the physician's function to train the patient to alter his work and recreational program so that he will not try to do all his pleasure thinking when asleep.

Diet is of importance in some cases. The author reports having succeeded in putting a quick end to a pollution habit which had extended over a 9-month period by forbidding a patient his bedtime snack. Absence of emissions on the nights he abstained from eating delighted the patient.

A too-busy married man was required to resign from several positions, and the effect was startling to the patient's family as it was to himself. Though he was enjoying sexual relations with his wife, he was deprived of any true psychic relief because he indulged at the end of a busy day when he was mentally confused. During sleep, when more perfect peace of mind and body was to be had, the sexual mechanism could function in an unconstrained manner.

Another patient's very obvious restriction in his

1. E. W. Hirsch, Chicago, in *Ill. Med. Jl.*, June

amative life was his apron-string attachment to his mother. Opportunity for marriage seemed hopeless. By adopting a plan of action which provided more hours of escape, the young man freed himself of bondage and from nightly seminal losses as well.

Seminal losses can be stemmed by studying the individual's mental process and directing the dynamic forces of the body along proper channels.

PROCTOLOGY

Russell von L. Buxton, M.D., *Editor*, Newport News, Va.

EARLY SYMPTOMS OF CARCINOMA IN THE COLON AND RECTUM

One so afflicted may have been aware of slight symptoms over a period of from six months to two years before he decides to consult a physician. Probably the commonest and most significant is some *slight alteration in bowel habits*—an occasional loose stool, a tendency towards constipation, or an unusual irregularity in the time of bowel movement. Mild general abdominal distress due to gas distention, tenderness to pressure on either the right or left side, cramping at intervals, hemorrhoids not too troublesome, small quantities of blood detected now and again. These arrive gently and their significance is often not appreciated by patient or physician.

These and other points are made by Abell[1]:

Dyspepsia, apparently so harmless, weight loss, weakness, fatigue, anorexia, sallowness, excepting in certain growth in the cecum, come only after many months.

In our last 136 operative procedures upon the colon and rectum there were 21 lesions of the cecum and ascending colon. Of these 10 patients presented themselves with secondary anemia, blood count in each below 3,600,000 red cells and 70% hemoglobin. A palpable mass in the right lower quadrant was present in 6, no visible blood loss has occurred. The anemia is believed to be due to the cauliflower-like neoplasms which bleed profusely; and absorption through the ulcerating base of toxic substances produced by virulent organisms thriving in the liquid feces. In no other malignant state can there be such severe grades of anemia with the lesion still operable and with a reasonable chance for a complete cure.

Another group of six patients complained of indigestion with gas and distention, borborygmi, and mild abdominal discomfort. Five of these in whom a mass was palpable stated that there was at times a vague pain in the lower abdomen. Anemia was not present in this group. In those complaining of dyspeptic symptoms who had no palpable mass a diagnosis depended entirely upon the barium enema.

Four individuals who were not feeling as well as usual, in course of a routine physical examination a mass in the right side of the colon was detected. Three were already aware of its presence. In this group no anemia, no weight loss, and no symptoms in the intestinal tract. In one instance obstruction was due to a large growth in the ascending colon just distal to the cecum.

Early symptoms of carcinoma in the *right* half of the colon follow no definite pattern.

In the descending and sigmoid portions of the colon there were 33 cases—24%. In practically every case obstructive symptoms were present. As the bowel wall atempts to force semi-solid fecal material past a narrowing diseased region there develop gas with bloating and distention, borborygmi, and constipation. Pain is early. The older the patient the more important this tendency towards constipation. *In an individual over 40 consider any such change from normal to be due to carcinoma until proven otherwise.* Pain, when present, is usually relieved by the passage of flatus or stool. Three patients considered themselves in good health prior to the onset of obstruction. A tumor could be felt in only seven of the 33 patients. Blood, mucus, change in size of stool and diarrhea are but rarely a part of the history.

The *transverse* colon contained 20 neoplasms—15%. Constipation slowly increasing, with cramps, and distention is characteristic of the distal half of this segment. When the splenic flexure is reached, dangers of obstruction increase. Twelve of these tumors could be palpated. Because of the transverse colon's mobility these tumors were at different times felt in different locations within the abdomen.

The closer the tumor to the *rectum* the more frequently blood and mucus in the stool, tenesmus, straining and discomfort bring a patient to the physician. The commonest complaint of 62 patients with lesions in the rectosigmoid and rectum was blood and mucus in the stool. Acute intestinal obstructions seen in patients over 40 who have not undergone a previous operation are most commonly caused by an annular cancer of the descending colon, rectosigmoid, or sigmoid. The rectum possesses a very large calibre and the lesions usually, until late in the disease, involve only one side; consequently, obstruction is rare. Ten of the 29 rectosigmoid lesions were palpable; and all of the 33 within the rectum were detected by digital examination. Of the rectal tumors seven came with a history of bleeding, painful hemorrhoids. Two of these patients had been under treatment;

1. Irvin Abell, Jr., Louisville, in *Ky. Med. Jl.*, June.

and *two had undergone recent hemorrhoidectomies and complained of their recurrence.* Carcinomas of the rectum otherwise than for some bleeding remain quite symptomless.

The symptoms of carcinoma of the colon may, depending upon the position and extent of the lesion, vary from the mildest to those of acute intestinal obstruction. The early symptoms arising in the right half of the colon follow no definite pattern and usually cause no change either in normal bowel habit or in the character of the stool. In the left half the importance of change in bowel habits and in character of the stool increases the farther the tumor is from the splenic flexure. As the rectum is approached, abnormal stools become the commonest early complaint.

If a carcinoma of the colon be suspected, there are four diagnostic routine procedures to be employed: 1) digital examination of the rectum; 2) sigmoidoscopy; 3) röntgenographic study; 4) repeated stool examination on a meat-free diet. On röntgenological examination lesions of the rectum are almost always missed. Early neoplasms of the cecum may escape detection, and tumors of the rectosigmoid may be covered by redundant loops of sigmoid.

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

UNIFIED MENTAL HYGIENE

AT THE BEGINNING of the civic fiscal year on July 1st, 1942, Dr. Hugh Carter Henry became Commissioner of Mental Hygiene and Hospitals. The office was created by the General Assembly at its last meeting and Dr. Henry has the distinction of being the first occupant of the office. The appointment is made by the Governor and confirmed by the General Assembly. The term of office is coincident with that of the appointing Governor. The salary is $7,500 a year. The Commissioner's office is in Richmond and his duties are whole-time. He is the executive officer of the State Hospital Board.

This important Board is composed of seven members. The members are each appointed by the Governor and confirmed by the General Assembly. They serve at the pleasure of the Governor, or for a term of four years. The members of the Board can be suspended or removed by the Governor, without his being obliged to proffer the reason for such action. This feature of the statute should be highly objectionable to the members of the Board.

The State Hospital Board of seven members has been in existence in Virginia for a few years. With the approval of the Governor, the Board created the office of Director of State Hospitals a few years ago and designated Doctor Henry to function as Director. The procedure marked a forward step in psychiatry in Virginia, even though the economic depression and the world-wide war have frustrated many plans and postponed even more hopes.

But some of the legislation enacted at the recent meeting of the General Assembly authorizes the State Hospital Board and the Commissioner to formulate plans and to fabricate systems by which those in need of mental treatment may come or be brought for diagnosis and for advice. Such clinical work would be done at the request of the family physician for patients financially unable to provide for themselves. At such clinics the investigative work would be helpful to the referring physician, to the patient and to the patient's family. If the patient's condition should justify admission to a state hospital, the Medical Director of the Clinic could be helpful in expediting the admission. The mental hygiene clinics, held here and there throughout the State, would likewise be able and willing to proffer after-hospital counsel to patients who had lately been discharged from state hospitals. Such counsel is often more needed by the former patient's family than by the patient. Well-trained members of a Mental Hygiene Clinic can often advise members of a family how to deal with a patient convalescing from mental sickness. Not infrequently the well members of the family, wholly unacquainted with mental sickness, are much in need of knowing how to get along with the person who has lately been mentally sick and who has not fully recovered.

Such Mental Hygiene Clinics may be useful, also, to school authorities, to teachers, to parents and to students. Discordant domestic relationships might often be kept out of the divorce courts if the disrupting influences could be promptly discovered, brought to light and dealt with frankly and honestly. Addictions—to alcoholic beverages and to other drugs—are generally symptomatic manifestations of conflicts within the individual—emotional, spiritual, mental—below the word-level. The addiction constitutes the tragic result of the individual's submitting himself to his own diagnostic and therapeutic ignorance and recklessness. In the incipiency of such a tendency the individual could be candidly and wholesomely advised of the risk involved in such self-medication. The mental hygienist would be interested in uncovering, with the patient's help, the nature and the cause of the conflict and the consequent discomfort resulting from it.

Every court may suddenly be confronted by the necessity of adopting a judicial attitude toward

conduct both unusual and difficult to understand. The courts should feel free to turn to the Commissioner of Mental Hygiene for knowledge and for counsel about how to proceed—or not to proceed. A good deal of conduct, essentially irrational, becomes verbalized through the daily press. The irresponsible person should be protected against such publicity.

The Governor, judges and other important public officials should be able to turn to an authoritative person for professional knowledge and for counsel. In all matters relating to mental health and to human behaviour the Commissioner of Mental Hygiene and Hospitals in Virginia will constitute a comfort and a blessing.

Dr. Henry has spent most of his medical life as a physician on the staff of a state hospital. He is innately endowed with splendid character; he is highly intelligent; he is honest in the darkest hour of night; he is a skilled and sagacious physician, a psychiatrist who has slowly and steadily broadened and deepened his knowledge and made more available his varied experiences, as a practitioner of medicine, as a State Hospital Superintendent and as the Director of the State's work in mental hygiene as a public health problem.

No progress is likely to be made in psychiatry by any state that limtis its thought about mental health to the functioning of its state hospitals. Mental sickness has become far-advanced in the individual by the time the patient is admitted to a state hospital. If preventive and curative therapy are to serve their purposes they must be brought into action before the mental sickness has become as fixed as the North Star. For mere chronicity often defies modification. The functioning of the two or three state hospitals should not represent the State's activity in mental hygiene, but only one small phase of its concern about mental health. Where there is to be progress there must be understanding and concordant and adequate effort. Such effort calls for unification of activity by one small board made effective through a skilled executive officer—such a Commissioner of Mental Hygiene as Dr. H. C. Henry, of Virginia.

A PEOPLE'S GRATITUDE

The University of North Carolina at its recent commencement conferred an honorary degree on Doctor George Marion Cooper. Had Jesus known such as Doctor Cooper He might not have given us the epigram that a prophet hath no honour in his own country. All of the hundred Trustees of the University of North Carolina know Doctor Cooper. They manifested by the bestowal of the earned degree their appreciation of Doctor Cooper's years of deep and diligent devotion to the welfare of the people—all of the people—of North Carolina.

The University of North Carolina, the oldest of our State universities, has shown its appreciation of the exceptional services of its Public Health servants. In 1888 this venerable institution conferred the L L. D. degree on Dr. Thomas Fanning Wood, The Apostle of Public Health in this State. That was four years before Dr. Wood's death, and after he had been State Health Officer 11 years. In 1912 the same degree was conferred on Dr. Richard H. Lewis, Dr. Wood's able coadjutor and successor in this office, three years after Dr. Lewis' retirement from a service of 17 years as State Health Officer. Then in 1929 the degree of D.Sc. was conferred on Dr. C. A. Shore in recognition of his distinguished service as Director of the State Laboratory for 21 years.

For a sufficient length of time to learn the meaning of the practice of medicine, Doctor Cooper was a family doctor in eastern North Carolina. In that activity he wrestled at first with his own limitations of medical knowledge and with disease and ignorance and poverty amongst the people. But Doctor Cooper had been called, and from the day of his graduation in 1905 from the University College of Medicine in Richmond he has given of himself wholly and without consideration for himself to the welfare of his fellow-mortals.

For many years he has been a member of the official staff of the State Board of Health of North Carolina. In his official function he has done many things and all of them well, but I have long looked upon the coming into my office each month of the *Bulletin* of the Board of Health as a personal visit, because Doctor Cooper has been its Editor. Through the medium of its pages he has talked in plain and simple and honest language to the people of the State about disease and about health.

I can think of no other official of North Carolina who has more devotedly and cheerfully and helpfully given himself to the welfare of the people of the State than Doctor Cooper. He represents all that is best in manhood and in medicine—in North Carolina and in the world.

REDUCTION OF SCAR FORMATION WITH SULFATHIAZOLE

(W. R. Glenn & Hugh Hailey, Atlanta, in *Jl. Med. Asso. Ga.*, June.)

A thick paste was made by adding a few drops of sterile distilled water to a powdered tablet of sulfathiazole applied generously to the infected wound and a small gauze dressing applied; orally a total of 120 grains of sulfathiazole was given in two days. A fresh supply of the sulfathiazole paste was applied daily. Scar formation was much reduced.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

THE DIAGNOSIS OF RECTAL DISEASES

One of the most common of the seats of complaint is the rectum. Recently in the course of an examination a man stated he had had "a little trouble with piles" but thought it nothing serious and had let it drag along from month to month and from year to year until finally he decided to have something done.

He had a simple fistula-in-ano and very large internal hemorrhoids one clump of which was thrombotic, and some external thrombotic hemorrhoids. Going into the history of the trouble very carefully we found he had been incapacitated a number of times for periods as long as one week, that he had suffered a great deal of pain, in fact, had never been without pain for a long period of time.

It was easy to visualize long years of suffering from a trouble which could be relieved very easily by surgical treatment. This, however, had been deferred from year to year until the condition became worse and the pain so severe that he could do no work.

It is significant that this patient first stated that his rectal disease did not give much trouble until recently, and only on close questioning was the fact developed that it had disabled him and caused him intense suffering over a long period of years. Out of the last four years he had lost about one year of actual working time due to this condition. Doubtless a close study of other cases will disclose equally startling facts.

In other cases doctors have been consulted but have failed to make a thorough examination, and certain grave rectal conditions have been overlooked or called piles and treated as such without any examination other than a very superficial observation of the external appearance.

In the diagnosis of rectal diseases, a detailed history is important, then a careful examination of the general pelvic and especially the perianal regions. A gloved-finger palpation will reveal many conditions. An examination with an anoscope or, if available, a sigmoidoscope, will be most helpful. It is necessary to look into the rectum to make an accurate examination. In case the symptoms remain obscure an x-ray examination of the colon and lower rectum may be indicated, using a barium enema; in a few cases an x-ray examination of the entire gastro-intestinal tract may be advisable.

It is necessary to have good diagnostic instruments to work with. However, a simple rectal speculum, a good flashlight, a rubber glove and lubricants will enable one to examine and diagnose most rectal troubles.

Perhaps 75% of the adults in this country have internal hemorrhoids, and many other conditions aggravate the hemorrhoidal trouble and cause a great deal of distress. Fissure-in-ano causes more pain than almost any other rectal trouble. Perianal ringworm is often overlooked as one of the causes of a distressing and intractable itching. Often this itching is attributed to the hemorrhoidal condition; and possibly the hemorrhoids may be increasing the local moisture and making the perianal area more subject to the heavy growth of the trichophyton organism; especially in people who are stout it alone may cause an irritating condition which is often disabling.

Cancer in the lower rectum should always be looked for as it may occur at fairly early ages. The diagnosis of complicated fistulae is not always easy, but it is absolutely necessary to trace each to its source before anything much can be done. In an extensive fistula-in-ano, especially one having its origin in the midline posterior, the fistula may burrow forward and around on both sides and have two or more openings; or, as I have seen in one case recently, a fistula may burrow around and completely encircle the rectum and in addition have several communicating pockets, all of which may cause a condition which is not only difficult to relieve but even at best may persist for a long period. Rectal spasm from any form of irritation, even colitis, may cause contraction of the sphincter ani muscle.

In making an examination of the lower rectum it is generally advisable to use a local, at times a general, anesthetic. A persistent irritation may set up a contraction of the rectum which will become hard and unyielding, and not rarely a fissure will result. A fissure developing near the central point of a contracted sphincter ani muscle will produce severe pain. Rectal polyps are fairly common. An extensive polyposis may be a serious matter.

It is especially important to be on the watch for malignant growths in or about the anal region. Granuloma inguinale may be present and should be kept in mind, as well as the perianal manifestations of lues and other venereal diseases.

The vast majority of rectal diseases can be diagnosed accurately by a careful history, a simple anal speculum, and a painstaking examination with a good light. Other examinations may be necessary and other diagnostic instruments may be helpful but the diagnosis in most cases can be made without any elaborate equipment.

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DIAGNOSIS AND TREATMENT OF HEART DISEASE WITHOUT SPECIAL EQUIPMENT

CARDIAC SYMPTOMS come in arteriosclerosis, hypertension, congenital malformations, syphilis, and rheumatic fever only when the myocardium begins to fail, and attempts at correction of underlying conditions are rarely of value; but with only the equipment commonly at hand, the physician can readily recognize the myocardial failure and, therefore, adequately treat most diseased hearts says one of our leading clinicians.[1] He goes on to give details.

The history will tell of dyspnea and palpitation. Minimal pathologic dyspnea is little more than normal shortness of breath on unusual exertion. Greater dyspnea may come in asthma-like attacks, chiefly at night, or on any exertion. Palpitation is apt to parallel the dyspnea. Both are more frequent on exertion after meals. Both may be greater with the patient lying than sitting. Most advanced dyspnea and palpitation are constant regardless of activity or position.

From congestion of individual organs may come nocturia, digestive disturbances from abdominal congestion, dull upper abdominal pain and slight jaundice from congestion of the liver. Pulmonary congestion may give a cough with occasional slight hemoptysis.

Examination of the heart itself may indicate the presence of disease and its type. *Cardiac failure is diagnosed, not from the heart, but from the evidences of congestion of other organs...* There will usually be coarse, moist, crepitant or crackling rales at one or both lung bases. The liver will usually be enlarged, smooth and tender.

Edema progresses from slight swelling of the ankles present only in the evening to enormous distention of feet, legs, scrotum, abdominal wall and lower back. Edema from myocardial failure never extends above the hydrostatic level of the heart. There may be fluid in pericardial, pleural or peritoneal spaces.

Technical procedures will occasionally be indispensable in identification of *coëxisting* disease.

Treatment of the myocardial failure of most heart disease is directed to reducing the heart's work and to increasing the cardiac efficiency by regulation of activity, by diet, by medication, and by removal of accumulated fluid. Activity should be reduced to less than the amount which will produce symptoms. Persistent edema or rales demand that the patient remain in bed. Lesser evidences require a detailed new regimen.

Morphine is regarded as the most valuable drug in advanced heart disease. One-quarter to one-half

1. J. B. McLester, Birmingham, in *Jl. Med. Asso. Ala.*, June

grain of phenobarbital t.i.d. often will promote peace of mind. It is recommended that digitalis be given to all patients with cardiac failure unless there are definite contraindications. Quinidine cannot replace nor be used simultaneously with digitalis. Powdered digitalis leaves in pills or capsules are best for routine use, in large dosage until the toxic level is reached—loss of appetite, nausea, vomiting, a greater number of extrasystoles or an increase in the degree of heart block—then stopped until 24 hours after they have disappeared. The danger is overbalanced by the value of full digitalization. In auricular fibrillation the *heart* rate slows progressively and a rate of 70—not the *radial* pulse rate—is used as the best criterion of proper digitalization.

If the patient has had no digitalis 7½ grains as the first dose, 4½ grains in 4 hours, then 3 grains every 4 hours until nausea appears the next day. For those who have had the drug recently or whose digitalis history is unknown, 3 grains every 4 hours will be safer and will digitalize in 3 or 4 days at the longest. As a maintenance dose 1½ to 3 grains daily—enough to occasionally produce mild nausea relieved by a few days off the drug—is to be continued indefinitely.

Weighing from day to day is the best way to judge fluid loss or retention. Restrict fluid intake to 2 or 3 pints a day when there is excessive or progressive edema.

When rest and digitalis do not correct the edema the mercurial diuretics are the most used. The essayist has got good results from 15 grains of ammonium chloride or nitrate t.i.d. for 2 or 3 days, then 1 c.c. of salyrgan intravenously; thereafter, 2 c.c. salyrgan q. 3 d. until the edema is gone or the drug ceases to exert its effect. Some patients, he says, will lose much fluid by taking 15 to 30 grams of urea by mouth t.i.d. Many have found the ammonium salts and the urea to nauseate, and the mercurial satisfactory when used alone.

Pericardial or pleural fluid should be removed by paracentesis as soon as it is found. Abominal fluid need not be removed by tapping until its presence embarrasses the respirations, unless diuretics are ineffective.

Diet is of minor importance. With advanced failure, 4 glasses of milk and nothing else is of value, but will be tolerated for only a few days. Three or four small meals of equal size will put less load on the heart. Restriction of salt to that normally added in the kitchen is helpful.

There are forms of heart disease that may require the use of technical equipment. Clinical acumen will often make the results of special tests merely confirmatory.

Coronary occlusion is usually easy to diagnosis from the character of the pain, but an ecg. may be necessary. Angina pectoris is diagnosed wholly from the history.

Abnormalities of the cardiac rhythm, may exist as the sole manifestation of disease, and are best identified from the ecg.; but frequently long observation will recognize them at the bedside.

In hyperthyroidism, treatment of the goitre is of material assistance to the heart. A rare case of myxedema may cause heart failure that responds only when thyroid extract is given. As thyroid extract is detrimental to other types of failure, this treatment must never be used without complete diagnostic study and very careful control. Beriberi heart simulates commoner forms, but responds only to large doses of thiamine.

The vast majority of heart disease, we are told, falls into the congestive failure group where specialized procedures are not necessary; an adequate diagnosis can be made and good response will follow treatment whether the physician has all of the technical equipment in the world or simply that which each of us carries in his bag.

RECALLING LA ROQUE ON PREVENTING DEATHS FROM APPENDICITIS

Dr. Paul LaRoque, a gifted practitioner and teacher of surgery, a native of North Carolina who spent most of his professional life in Virginia, has been dead about ten years. Seventeen years ago he made a report to the Richmond Academy of Medicine on A Thousand Cases of Appendicitis. This report was published in *International Clinics*, Vol. 1, Series 36.

Concluding, Dr. LaRoque offered these resolutions:

To any patient with severe abdominal pain liquid food is harmful; solid food is dangerous.

To attempt to purge the bowels is a pernicious practice.

Purgative medicines should be removed from the family medicine shelf. Laws similar to those against narcotics and alcohol should prohibit the sale of cathartics except upon prescription, and prohibit the treatment of patients with abdominal pain by any but qualified doctors of medicine.

People should be taught to call promptly a competent doctor for every case of severe abdominal pain and take no medicine, save possibly a single dose of paregoric, and no food before the doctor arrives.

Every doctor should regard calls to patients with abdominal pain as emergency calls to be answered with great promptnes, commanding painstaking study at intervals of not more than six or eight hours until the pain and other symptoms are completely relieved, or a working diagnosis made.

The correct diagnosis of the exact cause of severe abdominal pain within the first few hours of

its onset is possible but rare. When labelled appendicitis and operation performed or when labelled not appendicitis and operation not performed, the errors in diagnosis in both directions will total fifty-fifty.

The immediate treatment of symptoms and repeated examination of an acutely sick abdomen for the first few hours is of greater importance than exact diagnosis, will diminish the number of errors in diagnosis, and will permit the substitution of therapeutic for exploratory operations.

The permanently curative treatment of appendicitis is by surgical operation. There is no proof that the policy of pushing, shoving and rushing patients to the nearest operating table is ever necessary or generally wise.

There is no place in the management of appendicitis for hysterical excitement and theatrical performance.

The whole course of treatment of appendicitis in most cases may be very simple, and safely carried out. In others it may be extremely difficult and dangerous, entailing the need for the solution of big problems and the performance of operations of great magnitude. Every case demands the rigid application of physiological treatment from the moment of onset of the symptoms—before, during and after operation—until the patient is well on the road to complete recovery.

No case of appendicitis is so simple that the patient may not die; and no patient not moribund is so sick that the man, woman or child may not recover from the attack.

It is perhaps too much to hope that the lawyers who make our laws will enact laws against the free sale of purgatives. Lawyers are all-wise, and two of their fixed ideas are that purgatives are harmless and bad smells will cause epidemics. We might succeed in having some of our city governments pass an ordinance that would save a number of lives each year and do nobody but the undertaker any harm. City governments are not commonly run by lawyers.

At this time, when so many doctors are with the armed forces and so there is an ever greater tendency to treat a belly pain by taking a purgative and waiting to see what will happen, the publication of Dr. LaRoque's resolutions in every newspaper would save hundreds of lives. Each reader, whether private practitioner or public health officer should obtain such publication.

TO EAT PLEASANTLY AND HEALTHFULLY

THE June issue of the *Wisconsin Medical Journal* carries in a supplement a number of articles promotive of good eating and good health.

The first deals with milk[1]:

On the University of Wisconsin campus selected students have followed an all-milk diet for six-months periods, with only copper, manganese and iron added. At the end of the experiment they have invariably been in as good or better physical condition than at the start. There's an authenticated case of a woman following an all-milk schedule for more than three years and retaining perfect health throughout the period.

Milk will add to any menu. Whatever the dietary deficiency, milk can contribute something to its correction. All the vitamins are present in milk in adequate quantities except vitamin D, and this can be added by several well-known practical methods.

The vitamin A in butter and cheese has a dramatic role in the present war, for RAF pilots follow a careful vitamin-A-rich diet to improve their eyesight for night flying.

Calcium and phosphorus, the bone-builders, appear abundantly in milk.

Copper and iron, important in blood-building, and manganese, which affects reproduction, do not appear in quantity in milk, primarily because milk is the natural food for the suckling young and the infant child or young animal is well-supplied with a large enough reserve of blood-building elements to last until he is old enough to turn to a natural copper- or iron-supplying diet.

Iodine is found in the milk if the cow is fed iodized salt or inorganic iodine. This process is practical, but it is unnecessary so long as iodized salt or sea food can fill the iodine needs easily.

Casein and lactalbumin are the significant dairy proteins. The fats of milk supply energy, and they also carry such fat-soluble vitamins as A and K. The fats which appear in cream help in good body metabolism, as well.

Pasteurization carried on by the newer process has little effect on the nutritive value of milk.

Then naturally follows one on butter[2]:

Butter is a tasty, highly concentrated food product, with great nutritional values. Butter produced under different conditions may contain from 70 to 90% fats. State laws require that butter for public sale must contain at least 80% fats. The natural color of butter may vary from deepest yellow to almost white.

Vitamin A, the fat-soluble food substance necessary for the prevention of certain types of skin disorders and night blindness and xerophthalmia, is found in all butter. Its occurrence in nature is

1. E. B. Hart, Chairman of Section on Biochemistry, Univ. of Wisc. in *Wisc. Med. Jl.*, June

2. C. L. Christensen, Dean Col. of Agri., Univ. of Wisc. in *Wisc. Med. Jl.*, June

associated with the yellow plant pigments, the carotenes, which are converted in the human or animal, yielding vitamin A. Butter with a high carotene content, and consequently bright yellow in color, may have a low vitamin A content, and still have a high potency, since carotene is converted to vitamin A in the body. Vitamin A itself is a colorless, oily substance; and butter with a high vitamin A content, and virtually colorless, has a low carotene content. Therefore, while a good natural dark yellow tone is a good indication of the presence of carotene, absence of that color does not mean that the butter is deficient in total vitamin A.

Taking dairy animals off pasture causes vitamin A value of the butter to drop 50%. Dairymen are preventing this decrease by winter feeding with rich, green alfalfa hay or other produces high in carotene.

All butter is a fair source of vitamin D which is so essential to the bony structure. The natural source of vitamin D is sunlight, and thus butter from the milk of animals deprived of sunlight is lower in this vitamin. Fish liver oils are far superior to butter in supplying this antirachitic factor so important in preventing rickets and osteomalacia. Butter furnishes an auxiliary supply and artificial enrichment of butter by ultraviolet rays makes it an even better source.

Recent research has revealed a new factor in butter, as yet unnamed. The substance has never been isolated. All that is yet known is that young animals grow much better when supplied with it than when fed only vitamin A and D and supplementary fats of non-dairy origin.

All fats with a low melting point are easy to digest, and butter ranks second only to fish liver oils in ease of digestion and completeness of utilization.

Two ounces of good butter daily will supply the vitamin A requirements of an average child; two or three ounces of butter with a pint of whole milk daily will be quite adequate for an adult's vitamin A requirements.

A study of a butterfat and eggyolk factor which greatly promotes growth revealed that certain eye conditions and skin disorders could be traced to a deficiency of that butterfat factor.

University of Wisconsin experiments with the butterfat factor, vitamin A, showed that there was an accessory growth substance which did not occur elsewhere. So far tests have not shown its presence anywhere except in animal fats. Deficiency in what the scientists now call the "butterfat growth factor" shows its greatest effect in newborn animals. The new-growth factor is no known compound, but is some new type of saturated fatty acid, the presence of which encourages normal growth and development, and a deficiency of which results in poor health and stunted growth.

Inevitably, then, cheese[3]:

Taking on food in capsule form about which we have heard prophecies, is not to be desired. Cheese is a valuable concentrated food supply.

Timing, weight, test of milk used, type of milk employed, and length of curing, are all factors in the quality of cheese produced. Even the size of a cheese may vary its quality. But one thing does not change in the whole process; a good job of cheese manufacture will produce a cheese that possesses much of the nutrients that the milk contained, all securely sealed in the final product. The cheese has lost most of the sugar, ash and albumin which were contained in the milk, but the fat and other protein nutrients are almost completely retained.

The cheesemaker first eliminates much of the water and most of the sugar, ash and albumen; retains the fat, casein, calcium and phosphorus. It reqquires a very carefully selected diet to supply an adult's calcium needs unless cheese or milk constitute a part of that diet.

Vitamins A and D carry through almost unharmed in the process of converting whole milk to cheese. Most milks used in cheese-making contains only small amounts of vitamin D, and so cheese is not an exceptionally rich source of this vitamin.

Skim milk is used in making many cheeses, cottage cheese and Neufchatel being the chief examples. Cream or whole milk is frequently added.

There are three general classes of cheese: soft, semi-hard and hard. In the division of semi-hard cheeses, Roquefort and brick are the best known in this country. Roquefort which is made from a brittle, friable curd of uncooked cow's milk further ripened by molds, was imported to this country at first under the name of "bleu" cheese. Roquefort proper is made up in part from sheep's milk. Brick, which first achieved great popularity in Wisconsin, is a semi-hard cheese made from whole milk cooked and then ripened by bacterial action.

The main examples of the hard cheese are Edam and Gouda, Cheddar, Swiss and Parmesan.

Cheddar, the standard hard cheese in America, is made from cooked whole milk which is compressed and ripened with bacterial action.

In most European countries each community has a definite set of names for varying types of cheese, and since even in a scientifically controlled laboratory it takes great care to keep cheese flavor uniform, it is not surprising that the number of different flavors and colors and types of cheese in Europe is large.

3. W. V. Price & Catherine J. Personius, Univ. of Wisc. in *Wisc. Med. J.*, June

Tests indicate that the aged cheese is almost completely utilized (99%) in the digestion process.

Cheese is a rich, health-promoting food.

Last on this list, meat[4], not so specially associated in our minds with the State of Wisconsin:

Meat is important as a source of protein, energy and minerals.

Four ounces of liver supply about 7,000 units of Vitamin A; may run as high as 20,000 units.

In the B-complex vitamins, meat steps out in front. Thiamin (vitamin B_1) is important for health of the nervous system. Four slices of whole wheat bread contain 160 I.U. of thiamin, but the same size helping of pork loin contains over 500 units. Poultry and beef supply 50 units in a quarter-pound. Nicotinic acid appears in substantial amounts in all kinds of lean meats, but liver leads the parade.

Eat liver for vitamins. Riboflavin, which started out to be vitamin G, later was named B_2, then ended up with its present chemical name, is a growth-promoting and nerve-stabilizing vitamin. Kidney and heart, lamb and poultry, are sources of riboflavin. For vitamin B_6, beef liver, ham and veal are all important sources. For pantothenic acid, liver, kidney, heart, beef round and ham all rank high in content. For biotin, kidney and liver are excellent sources. Liver, kidney, lean beef and pork all supply adequate amounts of choline, the final member of the B-complex, which is important to normal functioning of human liver and kidneys. Vitamin K, which helps promote blood clotting and prevents hemorrhages, is found abundantly in liver, though it does not appear to any considerable extent in any other meats.

Fish in particular and meats in general supply a small amount of available calcium.

For phosphorus in the diet, meats, fish, and poultry are at the head of the list, and for iron and copper they are again exceptionally high.

How about tastiness? A thick, juicy, carefully cooked steak is one of the finest dishes ever planned, and *the less expensive meat cuts can be just as tasty and as nutritious.*

Two simple cooking rules insure good vitamin retention and good flavor in almost any kind of meat.

The first: Cook all meats at low temperatures. If they are roasted, the temperature should be 300 to 350 F. If they are cooked on top of the stove, they should be simmered. The reason for the low temperature is that meats shrink and lose more of their juices under high heat. That destroys or drains off much of the thiamin, takes away a lot of flavor, usually cooks the meat unevenly, and reduces the total number of servings of a piece of meat will yield.

The second rule: Use dry heat only on tender cuts, and cook with moisture on the less tender pieces.

In point of food value loss, roasting is the most costly cooking process. There is a 20 to 40% loss in thiamin and a somewhat smaller loss of riboflavin in roasting except at low temperatures, and even here there is a minor loss of thiamin. Thiamin is the only B-complex vitamin in great danger of destruction by high heats. Riboflavin is more stable, and nicotinic acid goes almost unaffected by high temperatures.

Pork, beef, poultry, fish, veal and lamb are all from 86 to 90% digested.

4. H. A. Waisman, et al, Univ. of Wisc. in *Wisc. Med. Jl.*, June

LEGAL ASPECTS OF FIRST AID BY LAY PEOPLE

Doubtless few of those unselfishly devoting time to learn how to render first-aid to those in dire need have ever thought of the possibility of being haled into court; either because of not tendering their services when somebody thinks such services should be tendered, or because the services have not been properly rendered in the judgment of some hard-to-please person.

The authors[1] of an article bringing this possibility to mind, one a physician, the other a judge, say that what they have to say applies only to the State of Minnesota. They do not undertake to speak for other states. However, most of us know that we exist under judge-made laws, much more than under legislature-made laws. A corporation of which I am a member was once obliged to return a charter to Raleigh after a number of years of its issue and have "Inc.", spelled out "Incorporated", on a fresh piece of paper, because of a decision by a Texas court.

Who does not know of a man giving a person a ride and being sued because of alleged injuries sustained in the course of the free ride?

According to a newspaper story of some five or six years ago a North Carolina lawyer and his wife were riding in his car with himself at the wheel, when an accident occurred. The wife alleged injury, sued her husband and recovered a substantial sum. Incidentally the sum was paid by an insurance company.

In first-aid work, as in medical work otherwise, there is an ever-present possibility of encountering legal difficulties. It is estimated that 15,000,000 people will receive first-aid training during 1942. Many of these people are assuming posts in Civil-

1. C. J. Potthoff, M. D., Associate Professor of Biological Sciences and Preventive Medicine, University of Minnesota, and Paul Carroll, Judge, District Court, Minneapolis, in *Minn. Med.*, June.

ian Defense, and are expected to perform first aid as needed.

A school teacher should, according to various decisions, care reasonably for a stricken school child, or a pupil who has taken lessons in first-aid should do this under the teacher's supervision.

The driver of a car which participates in an accident is required to assist injured persons, even though the driver was not responsible for the injury or accident. It appears dangerous for a Civilian Defense worker, trained in first aid, to assume that he would not be held, in a test case, to have responsibilities for rendering assistance. If the first-aiders uses reasonable care and judgement, he would not be liable for any injury or damage; but if he performed his acts negligently, he could be held to respond in damages.

It is probable that a physician, giving first aid only and as a volunteer, and though not intending to charge for his services, would be held to the same degree of care as if he were treating his own patient.

The first-aider might under certain circumstances be held to have contracted for such service as medical or hospital care or ambulance service. Even though the victim gives the first-aider permission to undertake procedures involving expense, the latter should explain in advance when ordering service for the victim that he is acting only as a volunteer, and is not otherwise related to, nor interested in, the party concerned.

In case of an accident and a victim lying at the accident scene, if living the first-aider should at once give attention indicated for the preservation of life or limb. He should attempt to gain a clear picture of the whole accident scene and history. If the victim is dead, the body should not be moved, nor possessions on or about the body. When strict adherence to the letter of the law is violated because of the dictates of common sense, the authorities seem to accept the removal as justifiable.

In all cases in which a crime is suspected, the sheriff or some other police officer, should be promptly informed of the facts.

When a driver collides with and damages an unattended vehicle, he is required to locate and notify the owner or to report the accident to a police officer. If he damages fixtures which are legally on or adjacent to a highway, he is required to take reasonable steps to notify the owner or person who is in charge of the property. A driver involved in a traffic accident is required, in general, to give his name, address, vehicle registration number, and show his driver's license if requested by the driver of the other vehicle or the owner of damaged property.

Physicians are required to report all cases in which gunshot wounds are treated. Garages and repair shops are required to report to local police and the highway commissioner when incoming motor vehicles give evidence of having been struck by a bullet. Coroners are required to report to the highway commissioner all cases of death resulting from motor vehicle accident.

It is the Coroner's duty to investigate in cases of 1) mysterious death, 2) accidental death, 3) suicide, 4) homicide, and in cases in which either of the latter three is suspected. When doubt exists whether the coroner should be called, he may usually be telephoned and given opportunity to decide. The first-aider should be aware that in cases of sudden death it may be necessary to notify the coroner, but ordinarily decision to call him may be made by others who may be at hand—police, physician.

A person, even though mentally competent, may refuse to allow a first-aider to splint a fracture. A refusal by a competent person should be respected; otherwise serious legal difficulties may be encountered. It is legally proper to thwart attempts at suicide.

If, despite all efforts, a child refuses an offer of help in the absence of a responsible relative, the first-aider will probably be upheld if he carries out emergency, life-saving measures. He should use caution.

As to the drunken, the aged disoriented, the concussion victim, or those suffering from a psychosis, the first-aider who exercises due restraint and confines himself to emergency life-saving and limb-saving measures in the case of any disoriented person who refuses an offer of help will probably not be penalized by a jury.

Sounds risky, doesn't it?

As a physician I have always been slow to volunteer my services. First-aiders will do well to refrain from making proffers unless it appears that their aid is needed to prevent serious eventuality.

DAVIS—From Page 415

In cases in which there has been a complaint of any rectal rtouble a great many different things can be the cause, and only by bearing all these possibilities in mind can we be sure to conduct our investigation so as to make an accurate diagnosis and prescribe proper treatment.

Those in general practice should use extreme care in advising any patient about a rectal trouble without first making a thorough examination.

AMYL NITRITE—There is perhaps a single contraindication to the use of amyl nitrite; *i.e.*, the presence of glaucoma, for it causes an increase in intraocular tension in spite of the lowering of systematic pressure.—*Uhley*, of Chicago, in *Lab. & Clin. Med.*, July.

TRI-STATE MEDICAL ASSOCIATION

Greenville, S. C., February 21st-22nd

RESOLUTION IN REGARD TO NURSES' TRAINING

DR. R. B. DAVIS, Greensboro:

A great responsibility rests upon the medical profession, in that the army and navy and reserves of all types are looking to the medical profession to be adequately taken care of as to disability and sickness during the war. We have not only got to provide proper hospitalization and proper medical personnel but we must also help to provide training for the proper number of nurses. The army is asking for 50,000 nurses and where they are coming from no one has been able to answer, but we do know that if sufficient nursing is provided for the wounded soldiers as well as for the civilians wounded in raids, etc., that we must now begin without delay to do something to train these nurses. The obstacles of the past should be rapidly put aside. We should, without delay, lay aside all red tape, all unnecessary argumentation. I am quite certain that this can be done if those who are inclined to want to argue about red tape and argue about things that are nonessential at this time only knew the sentiment of such a body as this; I, therefore, make a motion that the following Resolution be adopted which will help materially in producing these 50,000 nurses. The motion is:

> RESOLVED, that this Association go on record as favoring any compromise between the Nurses Standardization Board and Hospital Training Schools that will facilitate the graduation of more nurses that are competent to nurse our sick civilians and our wounded soldiers as well. Especially do we recommend that the requirement for the general hospitals of the smaller type to send their nurses to a special hospital for special training in Pediatrics and Obstetrics shall be eliminated; that all hospitals which are approved by the American Hospital Association and the American Medical Association be allowed to train nurses in the proportion of nurse to patient allowed in the large hospitals; and, further that the Secretary mail to the Chairmen of the Committee on Military Affairs in Washington, and to the corresponding officer for the State of Virginia, the State of North Carolina and the State of South Carolina; a copy of this Resolution as well to Miss Mary Beard, Director of Nursing Service, American Red Cross, Washington."

DR. J. M. NORTHINGTON, Charlotte:

I'd like to second this motion and speak briefly to it. I believe every doctor who thinks about anything at all has realized in all these years that we have been in medicine, that the period of training for nurses is unnecessarily long. There is no advantage to the patient for a nurse to know how to diagnose a disease, to know the pathology of the disease, to know the botanical origin or chemical constitution of the drugs she is using. My idea has always been this—that the function of the nurse and the doctor are complemental, not overlapping. If I want to make a shipment of freight from Charlotte to New York, the Southern railroad takes it to Washington in good condition, and it is transferred to the Pennsylvania railroad. The Southern has nothing to do with its transportation from Washington to New York. That is the job of the Pennsylvania. The function of nurses and doctors should not overlap. A good many years ago I went to Winston-Salem on an invitation from a hospital there to speak to a graduating class of nurses. What I particularly urged was that the class had been educated to be good nurses, not poor doctors.

Soon after I came to Charlotte some twenty-one or twenty-two years ago, there was a report in the papers that nurses were threatening to affiliate with the American Federation of Labor and a paper stated that William J. Mayo said, "Let them strike; I can take any girl with intelligence and health and make a competent nurse out of her in six weeks." I wrote last week to Dr. E. A. Hines, Jr., son of the long-time Secretary of the South Carolina Medical Association, and asked for confirmation, and I expect to find a letter from him when I get back home.

It is astounding that the prescribed course for nurses is longer than that for doctors of medicine. They study only three calendar years, but each student nurse year is of 11½ months ,seven days to the week. Count the hours. If it takes that much time to make a competent nurse, it would take ten years to make a competent doctor. If we would eliminate all that part of the course which serves only to teach them to be poor doctors, it would be well.

How did this state of affairs come about? Simply because this was for scores of years the cheapest way of getting hospital help. It would be absurd to think that those doctors who owned the hospitals and dictated the courses in nursing for many decades after Listerism came in would admit that a course of three years of 12 months each, seven days to the week—1,000 days—was needed to make a good nurse; when a course of two years of five months each, six days to the week—250 days—

was considered ample for making a competent doctor!

I heartily endorse this resolution and shall be glad to forward it, if instructed to do so.

Dr. L. A. Crowell, Lincolnton:

You know I have been running a training school for thirty-five years and at one time the Standardization Board made it so rigid that I had to do away with a training school and use trained nurses for more than a year. I don't want to come to that again. They gave us a great deal of trouble. I don't know that a nurse could be trained in six weeks, and I doubt if Will Mayo said that. I did hear him say that it was unnecessary to have nurses trained over two years.

Another thing—if we affiliate with other hospitals of pediatrics and obstetrics, let them take the first year of training and wait until they have been in training two years, then send them to Wilmington for pediatrics and to Charlotte for obstetrics. It takes about three months for a girl to get to where she is really worth anything to us. Something has got to be done about it. There is a dearth of nurses all over the country. It ought to be attended to and attended to now. Give women a good deal of authority and they will abuse it every time. I am sure that is true of nurses in North Carolina, especially those in charge of the Standardization Board in North Carolina. They make me so mad that I can hardly control myself at one of their meetings.

I think it would be very fine to pass this thing. I agree with it entirely. I hope it will go through and that it will improve the condition.

Dr. James K. Hall, Richmond:

I find myself wondering if the nurses organization had anything to do with it. We are living under alien authority. What used to be democracy and local self-government has abdicated. I don't do it unless I have to—when I have to deal with deans of medical colleges—we don't have deans any more—deans have become mere clerks. The authority, the incarnated power, is not at the medical college; it is somewhere else; it is in some great corporation or organization or foundation.

Who makes the standard? Medical colleges can admit only so many to the freshman class. That is all settled and fixed. Hospitals must have not only a minimum of beds but a minimum of books in the library. Dr. Crowell didn't realize what they are up to. It is very simple. What they are up to and what they succeeded in doing is to put the training schools out of commission—the same thing John L. Lewis and William Green are up to. I don't know what we are going to do about it, but that is the trouble.

Dr. J. S. Holbrook, Statesville:

Not as an Army officer, but as a citizen, I endorse this Resolution very heartily. I have been teaching nurses ten years. I taught in old Pennsylvania hospital and in Statesville for more than eight years, and now, looking at it in the present crisis and with some familiarity with the needs, military and civil, I see need for nurses training schools relaxing rather than tightening their requirements. And that applies to West Point and many colleges that have cut courses short. To do that will produce nurses faster in this need. We need, not pediatric and obstetric nurses, but nurses capable of taking care of various civilian and military emergencies. The motion is commendable and I hope it is adopted.

Dr. F. E. Kredel, Charleston:

I wouldn't care to prolong the discussion. I would certainly vote for the Resolution as an emergency measure. I am not sure that I would approve it on a permanent basis.

Dr. Addison Brenizer, Charlotte:

I did postgraduate work in Germany. Over there nurses are trained to do the work of nurses—take temperatures, do catheterizations, give baths and enemas and sit by and guard the patient and keep charts. Of course we know nurses have their association and would like to add more and more to their courses to add prestige to their profession; but as doctors' aids in caring for sick and wounded, nurses do not need to know all they are required to learn and soon forget. I taught nurses for a number of years. I taught anatomy and surgery, and frankly, I never had a nurse pass the examination I gave. I passed them but they did not pass. Even the little they knew was frequently too much, and in knowing too much they are apt to dictate a bit to you. Operating-room nurses ought to be highly trained and of course there is the adornment of the mind in having more educated women with you as associates or companions. I have had nurses like that. I have given up a nurse recently that I had many years. I trained that nurse, to the *n*th power. I far preferred to have her as a surgical assistant than any doctor that I know. She could needle a vein so much better than I could, it was a shame. She gave salt injections and sometimes blood transfusions. That nurse was trained for a definite purpose by and for me. As for the usual run of nurses who are going to look after patients in bed, I have always felt I could take a group of women here in the South beyond 30 years—they are usually old maids beyond 30 years—take them around with me a few months and teach them to take pulses, follow temperatures and watch patients for alarming symp-

toms and I think they would know almost all that needs to be known, with others to help.

DR. HALL: Why submit to domination?

DR. BRENIZER: They are striving to reach certain goals. They have an arrangement with Queens College in Charlotte to give them additional knowledge. Through getting additional knowledge, they get a degree beyond R.N.

There were about 400 trained nurses in the 5000-bed hospital where I had the surgical service in World War No. 1. Those nurses were well trained. They came largely from the Massachusetts General Hospital. It was of course a great satisfaction to work with women like that, but they could have done this war work with far less general education and far less instruction in the work of doctors than they had. All this mental adornment that these nurses are getting, they are getting because nurses as a profession want them to have it. They want them to have additional education. I do think a man ought to have background. I think it is a lovely thing for him and his companions to have background. But for our present mental adornment is not a requisite. It is a superficiality. We are dealing with the nurse who is going to take care of the patient. In the Army a nurse's work is limited; she is not allowed to do the things that I had a specially trained nurse do for me. She keeps charts and records temperatures and beyond that she has an orderly for the men in the war—women are not fighting except in Russia—and the orderly does things for the man. As I see nurses in the Army, they go around and take temperatures and have orderlies whisper to them—there has been a stool—and they take it with a little embarrassment.

I think in an emergency, they could get along with quite a curtailment. In fact, I think the training given a nurse's aid now, and that alone, could be sufficient to allow nurses to look after wards in a hospital.

DR. NORTHINGTON: In all seriousness, right now if I were to fall down unconscious, the two women I'd rather have nurse me—neither one of them ever had a day's training in a hospital. One of them spelled hemorrhage h-e-m-o-r-i-d-g-e; but she recognized its occurrence in a typhoid patient and so was instrumental in saving the life.

DR. G. R. WILKINSON, Greenville:

Those people have aspirations just like we do and they have got a lot of background to their so-called profession, etc. As I see the thing in the hospital from day to day, and I stay about three hours in the hospital every day, what we need is more negro orderlies and more negro maids. Nine tenths of the work could be done by persons paid five or six dollars a week. My cook could do it. I don't understand why we don't have that type of help. Why don't we have more orderlies and maids? I haven't been in a hospital this side of Baltimore where a man didn't have to wait half an hour for a urinal or a bed-pan. A man is more or less out of luck in a hospital. Girls don't want to do what nurses used to do and furthermore, orderlies in the hospitals are scarce. I tell patients, "When you go to the hospital, take about five dollars and change it up into quarters and dimes; every time you punch that damned button some negro will be watching for it and you will get service." I think what we are trying to do is to have too well trained personnel to do the menial jobs in the main. All of us have treated people in the homes. The mother does the nursing in the home. She has never seen a hospital. There are very few things the trained nurse can do that a mother can't do with a very few guiding remarks. I think the dilemma we find ourselves in now is very largely our own fault because for a long time the nurse in the training school was the cheapest help we could get. We paid them two or three dollars a week and worked hell out of them. Now they have gradually gotten together and we are having to pay the piper. I was born and raised in a hospital. What we need is more people willing to do menial jobs. There is no need for nurses to do sweeping and dusting in the room or even carry the trays in to the patients. Men have to be put on with an orderly. Why can't women be put on with a maid? It seems like what we need.

In the Army I had 90 beds in a pneumonia ward. Then I had 90 meningitis beds. I got hardly a thing out of the nurses. They were always chinning with the boys. The dumbbells among my patients I didn't discharge when they got well. I just kept them and they did darned well and kept beautiful records. Forty or fifty fellows wanted dates with the girls every day. I should think the Army, Navy and Marines would be a sight better off if they didn't have a woman within fifty miles. The work could be done by enlisted men, men who have never been in a cock-eyed hospital before. We need one or two charge nurses. We don't need trained personnel to do all sorts of things.

What we need is not so much a matter of lowering standards of a particular group as to adapt our own minds and hearts to the actual situation and employ people capable of doing it without bothering ourselves so violently about what we used to have. I don't believe we are going to be able to do anything with this nursing situation. What I want to do is to have maids and orderlies.

DR. CROWELL: A good answer is that if we put colored maids on, some of the patients say: That negro is waiting on me and I don't like it; I want a nurse to look after me. That keeps the maid from waiting on them.

DR. WILKINSON: Most of my patients would rather have a negro.

DR. BRENIZER:

We build our hospitals too fine. I am going to build a hospital with a tower in the middle and a number of spokes radiating; build it flat on the ground like an ordinary flower house and have little perches out where you can roll patients' beds and in the middle of the tower have the operating room, laboratory and x-ray apparatus and have somebody look after each one of those and I am going to have nurses that he speaks of to operate into these spokes. I am going to get run out of the medical profession, I think. I am going to say: If you come to my place, I will take care of you and feed you for $3.00 a day. Seventy-five per cent of the people in my home county could come in and get an operation under good care without having to borrow money which it would take them the rest of their lives to pay it back. We are talking here as doctors and wouldn't dare say before the nurses what we have said here.

DR. NORTHINGTON:

Why not?

DR. BRENIZER:

I can't blame them from trying to elevate the profession from their viewpoint.

DR. NORTHINGTON:

Dr. Geo. Tyler quoted Dr. Kennedy, of the Joseph Price Hospital, Philadelphia, here today. Dr. Price, who founded that hospital, was a man of his own mind. He never submitted to standardization—one of the most hateful words in our language. Few would be willing to compare results with Price or Kennedy. Dr. Price said the only thing he wanted in a nurse was "a strong back, a tender heart and a willing mind."

DR. BRENIZER:

Gentlemen, we have been drifting along having a little conversation. There has been some resolutions read and a motion made by Dr. Davis and seconded by Dr. Northington that these resolutions be accepted and Dr. Davis also mentioned the Secretary sending the resolutions to each State representative in Washington, etc. All those in favor of these resolutions and at the same time the motion that they be accepted, let it be known by saying "Aye". Opposed, "No".

Passed unanimously.

CONSTITUTION AND BY-LAWS OF THE AMERICAN GERIATRICS SOCIETY

CONSTITUTION

Article I

Name

The name of this organization shall be the American Geriatrics Society.

Article II

Object

Section 1. The object of this organization is the encouragement and promotion of the study of Geriatrics.

Section 2. Study shall include: Preventive and curative treatment of disease of advancing years.

Section 3. The object of the organization shall be furthered whenever possible by the individual members and by the society as a whole.

Article III

Members

The members of this organization shall be graduate M. D.'s from recognized medical schools who are especially interested in this subject. They must be members of their State Medical Societies.

Article IV

Officers

Section 1. The officers of this organization shall be a President, First Vice President, Second Vice President, Secretary and Treasurer. Their duties shall be those usually devolving upon such officers, and they shall serve until their successors have been elected.

Section 2. The officers shall be elected at the annual meeting.

Article V

Standing Committees

The standing committees, appointed by the President, shall be Executive, Membership, Program.

The Membership Committee shall be composed of five members, and its duties be to make inquiry concerning applicants for membership, determine their qualifications, and report approved applications to the society.

The Program Committee shall be composed of five members, and its duties shall be to arrange for places of meeting and to plan the program of the year.

The Executive Committee shall be composed of three members, one of whom shall be the President of the society and its duties shall be to present important measures to the society.

Article VI

Meetings

Section 1. Regular meetings of this society shall be held during the annual meeting of the American Medical Association or at any such time and place as the Executive Committee shall designate, such designation to be at least three months in advance of the meeting.

Section 2. A special meeting of the society may be called by three officers or by a petition signed by one-fourth of the members.

Section 3. A regular meeting may be postponed by a notice signed by three officers or by a petition signed by one-third of the members.

Article VII

Amending the Constitution

The constitution of this society may be amended by a two-thirds vote of those present at any stated meeting, provided that notice of the proposed amendment or amendments has been given at the preceding annual meeting.

BY-LAWS

Article I

Quorum

Section 1. A majority of the members present and voting at any stated meeting shall constitute a quorum.

Article II

Rights and Duties of Members

Section 1. Names of applicants for membership shall be filed with the Membership Committee. If the applicants are found to have the required qualifications their admission to membership shall be announced in the meeting.

Section 2. Members in good standing may vote upon all business brought before the society.

Section 3. To be in good standing, members must not have been absent from three consecutive meetings, unless excused in advance by the Executive Committee, and their dues must not be more than three months past due.

Article III

Loss of Membership

The names of members who have been absent from three consecutives meetings, without having been excused, or whose dues are more than three months past due, shall be dropped from the roll of the society. Such members may be reinstated by the Membership Committee upon their payment of dues in arrears and current dues.

Article IV

Dues and Assessments

Section 1. The annual dues shall be five dollars, due at the first meeting after the election of officers or at the time of application for membership. New members shall pay the full annual dues for the period between their admission to membership and the next annual meeting.

Section 2. Special assessments may be levied only upon the recommendation of the Executive Committee and by a two-thirds vote of the members present and voting at any stated meeting.

Article V

Order of Business

The order of business at meetings shall be according to Robert's *Rules of Order*. This order of business may be suspended or changed at any meeting by a majority vote, a quorum being present.

Article VI

Amending the By-Laws

These by-laws may be amended by a majority vote at any meeting, provided written notice of the proposed amendment has been sent to each member one month before the stated meeting.

EARLY MICROSCOPY.—In this country the microscope was first used in Boston. Cotton Mather had one and in a sermon in 1686 he tells about seeing animalcules in ink. Edward Bromfield seems to have been the first New England microscopist. He made his own microscopes. He demonstrated his findings to the Rev. Thomas Prince, who wrote about them in the *American Magazine*, Boston, November 30th, 1746. He here described defecation in the louse, "until we see his fluids boiling, his muscular parts in convulsions and death ensues from the collected sunbeams."

Oliver Wendell Holmes made traveling or demonstration microscopes for teaching purposes, similar to Quekett's at the Royal College of Surgeons but without the tramway. These consisted essentially of a wooden box within which a microscope and an oil-burning lamp could be fixed and was passed about from student to student. —B. E. Clarke, in *R. I. Med. Jl.*

CLERGYMEN are surest in their estimates of what is right and what is wrong; physicians and social workers, in closest contact with people, the most silent.—Millikin.

NEWS

McGUIRE UNIT MEMBERS FOR EMERGENCY DUTY

Thirty-five members of the original McGuire Unit, physicians, surgeons, nurses and enlisted men, who served in France 24 years ago, now stand ready to serve their fellow-citizens in case of air raids of other wartime emergencies.

The unit is operating under the Office of Civilian Defense.

Dr. W. Lowndes Peple is commander and major surgical service; William B. Elwang, adjutant, first sergeant surgical service; Dr. John Bell Williams, supply officer, captain, dental service.

First call doctors: Dr. Carrington Williams, first lieutenant; Dr. R. G. Willis, first lieutenant; Dr. James H. Smith, captain; and Dr. John B. Williams.

First call nurses: Miss Emily Gordon Friend, Mrs. Ann W. Gray, Miss Ethlynde E. Smith and Mrs. Howard J. Winans. Motor corps-clerical, Mrs. Alfred P. Goddin.

Second call doctors: Dr. Peple, Dr. Fred M. Hodges, captain; Dr. William B. Porter, captain; Dr. Alvah L. Herring, captain; Dr. Guy R. Harrison, captain.

Second call nurses: Miss Cary Breckenridge, Mrs. Basil M. Jones, Mrs. Stuart McGuire and Miss Anna T. Pope.

Younger nurses and members of the medical profession have entered actual army service as the Forty-fifth General Hospital, actively succeeding the historical unit formed in the last war by Dr. Stuart McGuire.

HOFFMAN-LA ROCHE ISSUES WAR BOND BONUS

Employees of Hoffman-La Roche, Inc., pharmaceutical and vitamin manufacturers of Nutley, N. J., who have been in the service of the company for at least one year; prior to July 1st, 1942, have received another bonus in the form of War Savings Bonds. This Bond bonus was issued as a tangible expression of the management's appreciation of the faithfulness of the Roche employees.

Those members of the Roche personnel who entered the employ of the company before January 1, 1941 received a War Savings Bond bonus equivalent to two week's salary; those who entered prior to July 1, 1941 received one week's salary in bonds.

This is the second time within six months that Roche employees have received War Savings Bonds as a bonus. Last December some 1,100 employees received, in addition to their regular service cash bonuses, a special Bond bonus equivalent to two weeks' salary. In both instances the amount of the Bonds has been computed on the basis of present purchase price—thus a worker earning $37.50 weekly and entitled to two weeks' salary equivalent has received a Bond having a maturity value ten years hence of $100.

PHYSICIAN-MINE OWNER PROPOSES CHANGE IN EDUCATION IN VIRGINIA

Dr. Huston St. Clair, of Tazewell, Va., new president of the Virginia State Chamber of Commerce, has recommended that the Chamber concentrate on an analysis of the adequacy of Virginia's educational system to meet requirements of modern life. He proposes an exhaustive, long-time study of the entire Virginia educational system in relation to these needs. Dr. St. Clair is a graduate of Washington and Lee University and the Medical School of the University of Pennsylvania. He is also president of the Jewell Ridge Coal Corporation, the Pocahontas Mining Corporation and the Virginia Smokeless Coal Company, and a director of various institutions and businesses in Western Virginia.



GROUND WORK

Ground work often predetermines the success or failure of crops and fruit-bearing vegetation. The health and well-being of humans, too, depends on early ground work which is the basis of their fortification against impaired health in later years. Your prescription of Vi-Penta Perles or Vi-Penta Drops may be the means of helping to provide the necessary building-up of body defense and resistance to combat the constant threat of disease. We recommend the use of the Vi-Penta preparations even during the summer months so that your patients may be well-fortified against any vitamin deficiency and so enjoy a full measure of good health. Vi-Penta Perles are supplied in boxes of 25 and 100, and bottles of 250. Vi-Penta Drops, for infants and children, in calibrated dropper vials, 15 cc and unit packages of 60 cc.

HOFFMANN - LA ROCHE, INCORPORATED, ROCHE PARK, NUTLEY, NEW JERSEY

IN TWO FORMS—DROPS AND PERLES *Vi-Penta* 'ROCHE'

DR. W. E. OVERCASH, formerly of Statesville, and Southern Pines, after postgraduate work in Boston, has opened offices in Roanoke, Virginia.

Notice of his election as a Fellow in the Royal College of Physicians of London has been received by DR. FRANK L. APPERLY, Professor of Pathology in the Medical College of Virginia, Richmond. A graduate of Oxford, Dr. Apperly came to the Medical College 10 years ago. He served with British medical forces in the first World War. The oldest medical society in Europe, the London Royal College of Physicians, was founded by Henry VIII in 1518.

DR. ALEXANDER G. BROWN, JR., of Richmond, has given $4,000 to Randolph-Macon College to be used to establish a memorial fund to his father, the late Rev. Alexander Gustavus Brown, D.D.

MARRIED

Dr. Joseph Wade Chandler Marshall, of Jacksonville, Florida, and Miss Dorothy Clinton White, of Mathews Court House, Virginia, were married on June 13th. Dr. Marshall is a member of the surgical staff of Elizabeth Buxton Hospital, Newport News.

Dr. Alfred Rives Berkeley, Jr., and Miss Jane King Funkhouser, both of Roanoke, were married on June 12th.

Dr. Isham Trotter Hardy, of Newport News, and Miss Mary Simkins Taliaferro, of Hampton, Virginia, were married on June 6th.

Dr. Glenn Taylor Foust, Jr., of the University of Virginia, and Miss Nancy Douglas Tanner, of Culpeper, were married on June 12th.

Dr. Gray Carlton Hughes, Martinsville, Virginia, and Miss Meta Inman, Kingstree, South Carolina, June 6th.

DIED

Dr. Arthur B. Crosby, aged 71, of Big Island, died June 26th at his home. Dr. Cosby, a graduate of the University of Richmond and the Medical College of Virginia, was a prominent physician in Richmond for 22 years, until his removal to his final field in Bedford County. Among the survivors is a son, Dr. Richard W. Cosby, of Los Angeles.

Dr. John R. Shannon, 78, widely known opthalmologist, died July 4th at his apartment in Monroe Terrace, in Richmond, after an illness of several months. Burial was in Hollywood Cemetery, pallbearers Austin S. Murray, of Orange, N. J., George Webster Reed Andrade, of Coconut Grove, Fla., and Dr. Alexander G. Brown, Jr., Dr. Frank Pole, Dr. Thomas E. Hughes, J. Jordan Leake, Moncure Moore, Alexander H. Sands and Arthur M. Cannon, of Richmond.

Dr. Shannon, a native of Kingston, Ontario, had made his home in Richmond since 1937, when he retired after many years of practice in New York as a specialist in eye diseases. He began practice there in 1892 as a staff member of the Manhattan Eye, Ear and Throat Hospital and advanced to rank of surgeon director of that hospital, retiring in 1928.

Dr. Roy K. Flannagan, 71, medical advisor to the Virginia Department of Public Health, died in his sleep at his home in Richmond, June 17th.

Dr. Kyle Bear Steele, 52, noted obstetrician and gynecologist and a director of the Life Extension Institute, died June 18th after a brief illness. Dr. Steele was a native of Steeletown, Va. For many years he had been a member of the staffs of Booth Memorial Hospital, New York Hospital and the New York Infirmary for Women and Children.

Dr. Fielding Lewis Taylor, 74, died at his home in New York City, June 22nd. He was born at Martinsville, Virginia, the son of Dr. Archibald Taylor, who was a surgeon in the United States, and later in the Confederate States, Army. Another ancestor was the Fielding Lewis who married George Washington's sister.

OUR MEDICAL SCHOOLS

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

Drs. A. M. Lassek, G. L. Rusmussen and George Clark read papers at the meeting of the American Association of Anatomists, April 1st-3d in New York.

Dr. Cyril O'Driscoll has been made Associate Professor of Anatomy. Drs. G. L. Rasmussen and George Clark have been promoted to assistant professorships.

Dr. Melvin Schadewald of the Department of Anatomy of West Virginia University has been made an instructor in the Department of Anatomy.

Dr. A. M. Lassek, Professor of Anatomy, has been doing research work on the pyramidal tract. Two of his recent papers are: The Human Pyramidal Tract. V. Postnatal Changes in the Axons of the Pyramids, published in the March issue of the *Archives of Neurology & Psychiatry*; and The Human Pyramidal Tract. IV. A Study of the Mature Myelinated Fibers of the Pyramid, published in the April issue of *J. Comp. Neur.*

Dr. W. Atmar Smith, Associate Professor of Medicine, has been made president-elect of the South Carolina Medical Association.

Dr. F. B. Johnson of the Department of Clinical Pathology returned to Charleston in June to give a short course in Laboratory Examinations for Venereal Diseases for the technicians and health officers of the State Board of Health connected with the County Venereal Clinics being established over the State.

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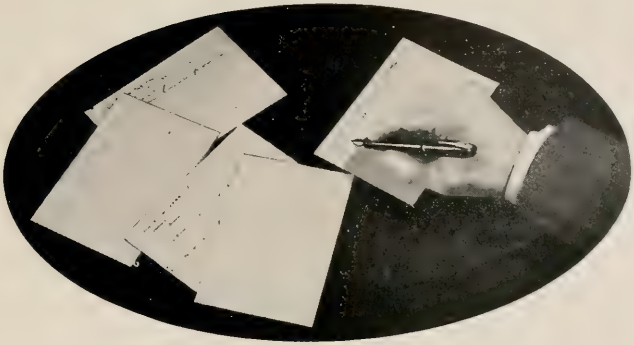
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* * *

**J.A.M.A., 93:1110—October 12, 1929*
Brückner, H.—Die Biochemie des Tabaks, 1936

***The Military Surgeon, Vol. 89, No. 1, p. 5, July, 1941*

****ibid. p. 5*

● SEND FOR REPRINT of an important contribution to medical literature—"The Cigarette, The Soldier, and The Physician," The Military Surgeon, July, 1941—revealing many new angles about smoking. Write Camel Cigarettes, Medical Relations Division, 1 Pershing Square, New York City.

Camel— *The Cigarette of Costlier Tobaccos*

Dr. John H. Murdock, Jr., Assistant in the Department left for active duty with the Army, May 14th.

Mr. J. A. Richardson has been added to the personnel of the Physiology Department.

Dr. A. M. Lassek has just finished instructing a class of 50 in First Aid. Dr. Cyril O'Driscoll has also finished instructing classes in First Aid.

Dr. O. B. Chamberlain, Associate Professor of Medicine, has been called to active duty in the army with the rank of Major.

Medical College of Virginia

A grant of $4,000.00 has been made by the W. E. Kellogg Foundation for loans and scholarships in the School of Nursing, making a total of $24,000.00 for loans and scholarships from this foundation for aid to students in the schools of Medicine, Dentistry, and Nursing.

Dr. H. Hudnall Ware, Jr., Professor of Obstetrics, recently gave a talk at the meeting of the Norfolk Medical Society on Treatment of Hemorrhage During Pregnancy, and another at a meeting of the Northern Neck Medical Society on The Management of Roxemia During Pregnancy.

Dr. Harvey B. Haag, Professor of Pharmacology, and Dr. J. H. Weatherby, Associate in Pharmacology, had an exhibit on Factors Influencing Skin Temperature at the recent meeting of the American Medical Association in Atlantic City. Dr. William M. Bickers, Associate in Gynecology, also had an exhibit on Dysmenorrhea. Dr. C. C. Coleman, Professor of Neurological Surgery, and Dr. Fred J. Wempler, Professor of Preventive Medicine, discussed papers given on the program. A large number of other faculty members attended the meeting.



Dr. Lewis E. Jarrett, Director of the Hospital Division, attended the meeting of the Credentials Committee of the American College of Hospital Administrators in Chicago recently.

University of Virginia

Dr. Fletcher D. Woodward and Dr. Slaughter Fitz-Hugh presented a paper on The Treatment of Recent Faciomaxillary and Mandibular Fractures before the Virginia Society of Ophthalmology and Otolaryngology in Staunton on May 16th.

On May 22nd, Dr. Fletcher Woodward presented a paper before the Regional Zone Conference of the American Society for the Hard of Hearing in Lynchburg. His subject was Modern Treatment of Deafness.

At the meeting of the American Broncho-esophagological Association in Atlantic City on June 9th, Dr. W. W. Waddell and Dr. Fletcher D. Woodward presented a paper on Bronchoscopy in the Newborn.

Dr. Fletcher D. Woodward discussed a paper on Lyrngeal Stenosis before the Section meeting of the American Medical Association in Atlantic City on June 11th.

At the meeting of the American Otological Society at Atlantic City on May 28th, Dr. Fletcher D. Woodward presented a paper on Residual Hearing.

Dr. Fletcher D. Woodward served on the American Board of Otolaryngology, which met in Philadelphia June 3d to 6th.

The Faculty has voted to recommend that the General Faculty confer the Degree of Doctor of Medicine on the following 62 candidates:

Adams, S. T.
Berkley, A. R.
Britt, L. P.
Bryant, J. M.
Burk, L. B.
Byrd, W. E.
Caffey, E. M.
Campbell, E. M.
Clore, J. N.
Coxe, J. W.
Crook, W. E.
Crumpacker, E. L.
Crutchfield, A. J.
Davis, W. A.
DeSaussure, R. L.
Deyerle, E. P.
Diamond, M. T.
Dickie, H. G.
Dickie, J. W.
Donelson, Martin
Farver, H. E.
Faust, G. T.
Goldstein, E. O.
Hall, J. M.
Harman, W. E.
Hawk, J. C.
Haw'ey, Chapin
Henderson, E. M.
Hoare, F. C.
Hoback, W. W.
Hopkins, J. H.
Irby, J. H.
Jones, D. H.
Linck, D. W.
Lingo, J. K.
Lowrance, P. B.
McCreery, E. P.
MacMillan, A. S.
Magruder, B. E.
Mangham, C. A.
Mann, D. V.
Miller, C. D.
Oast, J. W.
Parker, E. P.
Pritchett, Drake
Reynolds, Walker
Taimas, C. W.
Schley, R. L.
Shafer, W. H.
Shrum, R. C.
Stanley, R. R.
Thomas, W. N.
Thweatt, J. A.
Tucker, W. M.
Valentine, H. E.
Vann, J. A.
White, F. D.
Wilkerson, J. L.
Wine, M. B.
Yusshon, L. J.
Young, C. A.
Zeigler, I. N.

SULFONAMIDE FEVER: If you were to ask me what is the commonest obscure fever in Tennessee, I would say without any hesitation, sulfonamide fever. We should adopt a policy of never treating a patient for more than 72 hours with sulfonamides unless we have bacteriologic proof of its necessity.—McCombs of Knoxville, in *Jl. Tenn. State Med. Asso.*, June.

BOOKS

COLLECTED PAPERS of THE MAYO CLINIC and THE MAYO FOUNDATION: Edited by Richard M. Hewitt, B.A., M.A., M.D.; A. B. Nevling, M.D.; John R. Miner, B.A., Sc.D.; James R. Eckman, A.B.; and M. Katharine Smith, B.A. Volume XXXIII—1941. 1099 pages with 160 illustrations. Philadelphia and London: *W. B. Saunders Company,* 1942. Price $11.50.

The contents include, in whole or in the essentials:

Eleven articles on aviation medicine; forty-two on disease conditions of the alimentary tract; thirty on those of the genito-urinary organs; fifteen on those of the ductless glands; twenty-three on the blood and the circulatory organs; nine on the skin and syphilis; thirty on diseases affecting primarily the head, trunk and extremities; nine on diseases of and operations on the chest; eighteen on the brain, spinal cord and nerves; sixteen on radiology and physical medicine; fourteen on anesthesia and gas therapy; and seventeen on a diversity of subjects are listed under the title, miscellaneous.

All of these articles are authoritative, based on clinical and/or investigative work of the highest order.

HEALTH EDUCATION OF THE PUBLIC: By W. W. Bauer, B.S., M.D., Director, Bureau of Health Education, American Medical Association; Associate Editor of Hygeia, The Health Magazine; and Thomas G. Hull, Ph.D., Director, Scientific Exhibit, American Medical Association. Second Edition, Revised. 315 pages with 52 illustrations. *W. B. Saunders Company,* Philadelphia and London, 1942. Price $2.75.

This edition is after the same general plan of the first. Objectives are defined and instruction by radio, by exhibits, by meetings, by newspapers, by motion pictures and various other means are given due consideration. The chapter on measurement of results is written with due regard to the difficulty of making such measurement.

Education of our lawmakers to the point of repealing laws licensing members of every fantastic "School of Medicine" is the kind of health education most needed.

HUGHES' PRACTICE OF MEDICINE—16th Edition: Revised and Edited by Burgess Gordon, M.D., Clinical Professor of Medicine, Jefferson Medical College, Philadelphia, with sections on Nervous and Mental Diseases by Harold D. Palmer, M.D., Professor of Psychology, Woman's Medical College, Philadelphia; and on Diseases of the Skin, by Vaughn C. Garner, M.D., Dermatologist to the Germantown and Frankford Hospitals, Philadelphia. Additional contributors to this edition: Sections of Clinical Methods by Robert Charr, M.D., Instructor in Medicine, Jefferson Medical College; articles on Endocrinology by

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Abraham E. Rakoff, M.D., Director of Endocrine Laboratories, Jefferson Hospital; Legal Aspects of Medicine, by Louis M. Stevens, Esq., President, Board of Trustees of the Presbyterian Hospital, Philadelphia. 36 illustrations, numerous prescriptions. 791 pages. *The Blakiston Company,* 1012 Walnut Street, Philadelphia. $5.75.. 1942.

Designed for the use of the general practitioner who seeks to keep pace with the progress of medicine in every field, this book has been carefully revised throughout. It presents the many new advances in treatment, particularly with respect to chemotherapy, vitamin therapy and endocrinotherapy.

Problems of stress and strain of present-day life are dealt with in a helpful way. Studies of poisoning by war gases and the treatment are included.

Contents: Introduction; Fever; Care of the Patient; Communicable Diseases; Notifiable Diseases; Legal Aspects of the Practice of Medicine; Infectious Diseases; Virus Infections; Diseases Due to Rickettsiae; Mycotic Infections; Diseases Due to Protozoa; Diseases Due to Spirochetes; Diseases Due to Metazoa; Diseases of Doubtful Etiology; Diseases of Allergy; Diseases Due to Physical Agents; Intoxications; Diseases Dut to Chemical Agents; Deficiency Diseases; Locomotor System; Bones; Metabolism; Digestive System; Liver; Bile Passages and Gall Bladder; Pancreas; Peritoneum; Urinary Organs; Blood; Spleen; Ductless Glands; Circulatory System; Respiratory System; Nervous System; Skin; Geriatrics.

MANUAL OF STANDARD PRACTICE OF PLASTIC AND MAXILLOFACIAL SURGERY: Prepared and Edited by the Subcommittee on Plastic and Maxillofacial Surgery of the Committee on Surgery of the Division of Medical Sciences of the National Research Council, and Representatives of the Medical Department, U. S. Army. 432 pages with 259 illustrations. Philadelphia and London: *W. B. Saunders Company,* 1942. Price $5.00.

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The series of which this volume is a unit is made necessary by the enormous enlargement of the Medical Department of the Army, bringing in civilian surgeon personnel with little or no experience in military surgery. It is realized that there is a need in providing this instruction that it be standardized, so that concentrating on one method will make possible the rapid attainment of proficiency in the new techniques, and a saving in supplies and accessory equipment will be affected.

The manuals are prepared under the direction of various subcommittees of the Committee on Surgery of the Division of Medical Sciences of the National Research Council.

It is gratifying to see that the authors are willing to send out a book of 400 pages as containing all that needs to be said on this subject.

ENDOCRINOLOGY: Clinical Application and Treatment, by August A. Werner, M.D., F.A.C.P., Assistant Professor of Internal Medicine, St. Louis University School of Medicine; Physician Endocrine Clinic, Desloge Hospital and the Missouri State Hospital No. 4, Farmington, Mo. Second edition, thoroughly revised, illustrated with 327 engravings and a colored plate. *Lea & Febiger,* Washington Square, Philadelphia. 1942. $10.00, net.

This revision, with its third larger content than the first edition and entirely rewritten, deals amply with the important subject of endocrinology. In this one volume of reasonable size the clinician may find the essentials of this subject, the means of making the diagnosis and of treating endocrine excess, endocrine deficiency and endocrine disorder. Familiarity with what is written here will bring order out of the confusion so prevalent as the result of extravagant claims and consequent disappointment.

DIAGNOSTIC SIGNS, REFLEXES AND SYNDROMES Standardized, by Wm. Egbert Robertson, M.D., F.A.C.P., Visiting Physician, Medical Division, Philadelphia General Hospital; and Harold F. Robertson, B.S., M.D., F.A.C.P., Associate in Medicine, University of Pennsylvania; Medical Chief to the Neuropsychiatric Department, Philadelphia General Hospital. Second revised edition. *F. A. Davis Company,* 1914-16 Cherry Street, Philadelphia. 1932. $3.50.

The significance in diagnosis of the presence or the absence of a certain reflex response to stimuli is not well presented generally. Many case reports refer to a certain reflex in such a way as to leave the reader puzzled as to what was found, as well as what significance attaches to the finding.

The first edition filled a real want and the new second edition has added valuable features.

VAGINAL HYSTERECTOMY, by James William Kennedy, M.D., F.A.C.S., Surgeon-in-Chief to the Joseph Price Hospital, Philadelphia; and Archibald Donald Campbell, M.D., C.M., F.R.C.S., (C), F.R.C.O.G., F.A.C.S., Assistant Professor of Obstetrics and Gynecology, McGill University; Montreal. Fully illustrated. *F. A. Davis Company,* 1914 Cherry Street, Philadelphia. 1942. $10.00.

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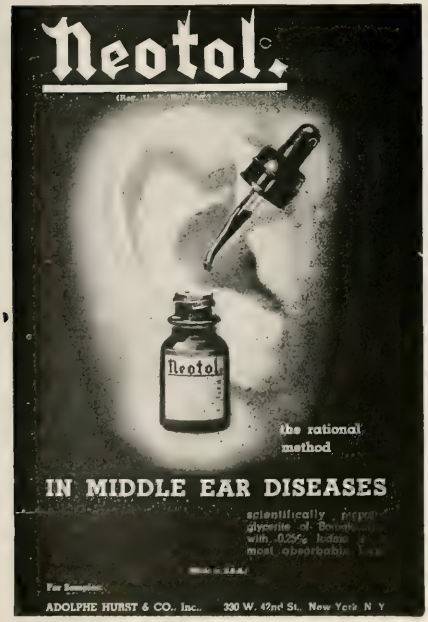
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The First and Only Public Museum in America devoted exclusively to sound and hearing has been opened at 570 Fifth Avenue in New York City. It is know as SONORAMA.

Included among its gay gadgets is the magic trumpet, a ring of red plastic material handed out at the door. As the sightseer wanders through the museum, there are signals indicating he is to put the trumpet to his ear. When he does so, he hears a voice, apparently coming from nowhere, explaining the exhibit before him. The secret lies in transforming sound into fields of magnetic force which can be detected only with the trumpet's aid.

Another device keeps a record of variations in the noise-level on Fifth Avenue. A Map of the Sound World, which produces the characteristic tone of various living and instrumental sound-makers, demonstrates the range of human hearing from lowest-pitched sounds to highest.

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SONORAMA has been designed and decorated by Emrich Nicholson and Douglas Maier, 135 East 53rd Street, two young products of the Yale School of Fine Arts, whose work first attracted general attention at the New York World's Fair, and whose architectural and industrial designs have been exhibited by the Architectural League of New York, The Museum of Modern Art, and the Metropolitan Museum of Art.

The museum will be open to the public, free of charge, daily from noon to 5 p. m., except on such days when special demonstrations are being held for scientific groups.

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PATENT ATTORNEY — PROF. ENGINEER

The authors say that the procedure which they have found is not new, yet the operation has not been widely practiced. They believe that when the merits of vaginal hysterectomy are properly evaluated, its field of application will be extended far beyond that now popularly accepted.

We are reminded that hysterectomy was first performed through the vagina, long before antisepsis was introduced. With the coming of antisepsic surgery, the vaginal route of removal was almost completely abandoned.

Only in recent years has vaginal hysterectomy regained something of its former popularity.

The book proper is written largely on the large experience of the authors. They write what they have seen and done, and with what result. Well is it said that you can not bend and twist pathological lesions to fit a certain operative procedure, and that hobbies have no place in the practice of medicine. Forty years ago in the Joseph Price Hospital hysterectomies done were 50-50 as to whether abdominal or vaginal; today over 95% are executed by the vaginal rout!

Certainly for too large a percentage of the hysterectomies done in this hospital is the vaginal route chosen, or not nearly a large enough number of these operations are being done through the vagina in the vast majority of the hospitals of the country.

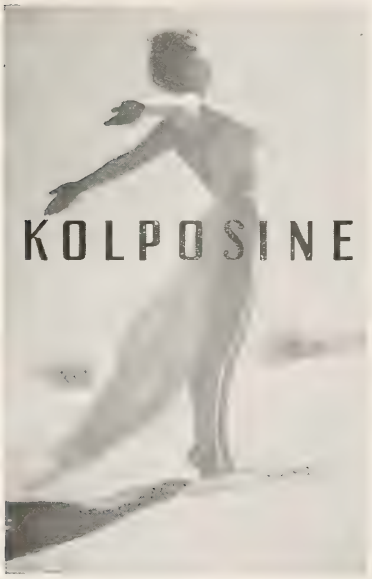
The excellent results quoted argue strongly for more study of the vaginal technique, for fewer abdominal and more vaginal hysterectomies.

WAR GASES: Their Identification and Decontamination, by Morris B. Jacobs, Ph.D., Food, Drug and Insecticide Admin. U. S. Dept. of Agric. 1927; Chemist, Dept. of Health, City of New York, 1928; Formerly Lt. U. S. Chemical Warfare Service Reserve. *Interscience Publishers, Inc.*, 215 Fourth Ave., New York City. 1942. $3.00.

The book has Sections on: Classification of Chemical Agents, Physical Characteristics and Physiological Responses of the War Gases, Effect of War Gases on Materials, Water and Food, Scheme of Analysis, Confirmatory Tests, Decontamination.

Since the civilian population is more likely to suffer from war gases than the military, physicians in civilian practice should know how to deal with such injuries.

THE MANAGEMENT OF FRACTURES, DISLOCATIONS, and SPRAINS, by John Albert Key, B.S., M.D., St. Louis, Clinical Professor of Orthopaedic Surgery, Washington University School of Medicine; Associate Surgeon, Barnes, Children's, and Jewish Hospitals; and H. Earle Conwell, M.D., F.A.C.S., Birmingham, Orthopaedic Surgeon to the Tennessee Coal, Iron and Railroad Company and the Orthopaedic and Truamatic Services of the Employees' Hospital and to the American Cast Iron Pipe Company; Chairman of the Committee on Fractures and Traumatic Surgery of the American Academy of Orthopaedic Surgeons; Attending Orthopaedic Surgeon to



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St. Vincent's Hospital, South Highlands Hospital, Hillman Hospital, Children's Hospital, Baptist Hospitals and Jefferson Hospital, Birmingham, Ala. Third Edition. *The C. V. Mosby Company,* 3525 Pine Boulevard, St. Louis. 1942. $12.50.

Fractures, dislocations and sprains in one volume: An excellent idea. These three conditions—so often associated in one case of injury, so often confused one with another, and the last being too often regarded as of little consequence—are properly covered in one book.

Repair, principles of treatment, first aid, complications, compound fractures and war wounds, dislocations, workmen's compensation law and medicological aspects of fracture cases are dealt with in Part I

Part II concerns itself with Diagnosis and Treatment of Specific Injuries—fractures of the skull and brain trauma; fractures of the bones of the face; injuries of the spine; fractures and dislocations of the hyoid, larynx and tracheal cartilages; injuries of the thorax; and so on.

The authors carry the idea all through of considering any case of severe injury as one requiring differential diagnosis with all three conditions in view.

The importance of an adequate supply of apparatus is stressed. Physicians and surgeons who do much of their practice in their offices and who do not take many of their fracture cases to hospitals are advised to keep a good supply of splints in their offices, and it is recommended that a small supply of essentials be kept in the doctor's automobile.

The authors favor the extensive use of plaster, for its more accurate support and comfort, and its requirement of less after care. The Böhler technique is advised against for all save those who are ever is advised against for all save those who are expert in its use.

There's a valuable chapter on Avoidance of Malpractice Suits. The chapter on Fractures of the Skull and Brain Trauma for this edition is contributed by Dr. Edgar F. Fincher, of Atlanta.

Every general surgeon and particularly every general practitioner should have a copy.

TEXTBOOK OF MEDICAL TREATMENT, by various authors, edited by D. M. Dunlop, B.A. (Oxon.), M.D., F.R.C.P. (Edin.), Professor of Therapeutics and Clinical Medicine, University of Edinburgh; Physician, Royal Infirmary, Edinburgh; L.S.P. Davidson, B.A. (Camb.), M.D., F.R.C.P. (Edin.), F.R.C.P. (Lond.), Professor of Medicine and Clinical Medicine, University of Edinburgh; Physician, Royal Infirmary, Edinburgh; J. W. McNee, D.S.O., D.Sc., M.D. (Glas.), F.R.C.P. (Lond.), Physician H. M., the King, in Scotland; Regius Professor of Practice of Medicine, University of Glasgow; with a foreword by the late Professor A. J. Clark, B.A. (Camb.), M.D., D.P.H., F.R.C.P. (Lond.), F.R.S., Formerly Professor of Materia Medica, University of Edinburgh. Second Edition. *The Williams and Wilkins Company,* Mt. Royal & Guilford Aves., Baltimore. 1942.

The authors have realized that treatment is inadequately presented in most medical textbooks and have supplied the lack. An attractive chapter is that entitled General Management of the Fevered Person. An illustration of the definiteness of the instruction: "In every case of pyrexia persisting for a week in which the diagnosis remains in doubt the practitioner should forward a sample of blood for culture and Widal test and should immediately take appropriate precautions lest the patient be suffering from typhoid fever."

The attitude of the book as to home *vs.* hospital treatment is based on sound information and good sense; this for example: "The mouth of the infant requires no cleaning and attempts to do so may, by injury to the mucous membrane, give rise to stomatitis."

The up-to-dateness of the book is attested by its directions as to treatment in cases of peptic ulcer and pneumonia, two conditions of which ideas as to treatment have been radically amended in the very recent past.

Psychotherapy in General Practice is covered helpfully in a Section by Psychopathologist MacColman, of Aberdeen. Arresting chapters of this Section deal with Adjustment of the Sexual Instinct and The Attitude of the Patient to Disease.

Every practitioner of medicine should have a copy on his desk and consult it frequently.

MAD DOG WITH WINGS

(L. A. Fox, in *Army Medical Bul.*, Jan.

In Brazil epidemics of a paralytic form of rabies have occurred. The vampire bat, not a true blood sucker, gouges out a mass of the skin so as to produce bleeding and then laps the blood with the tongue that passes through a slot-like aperture between the lower incisors.

The disease is always fatal.

When man is attacked the victim is almost never awakened; he wakes up in a pool of blood and people identify the wound as a bat bite; often at one puncture site there will be several bats feeding.

On the Island of Trinidad, with a population of 450,000 they had 21 deaths in one year. After the natives start losing their poultry and cattle they try to protect their stock. The bats then come in houses and attack man.

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PROSTATECTOMY: By reason of recently increased public enlightenment a much larger percentage of "conspicuously good risks", may safely have prostatectomy without preliminary drainage. The results in a series of 24 consecutive cases in which the risk was particularly good indicate that the average total period of preoperative and postoperative hospitalization in the good risks may be reduced to a figure not exceeding 16 days. This exceedingly short average total hospitalization for perineal prostatectomy tends to nullify the chief argument of those advocating routine or indiscriminate transurethral resection rather than selection of cases. This is not to be interpreted as blanket approval of prostatectomy without preliminary drainage, the necessity of which will always obtain in cases with impairment of renal function.—Davis, of Omaha, in *Jl. A. M. A.,* June 6th.



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JAMES M. NORTHINGTON, M.D., Editor

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Changes In Psychology Necessitated By Involution*

Edward Bartlett Allen, A.M., M.D., White Plains, New York

I HAVE couched my title in scientific terms to appeal to your professional interest. If I were writing for those with more latent powers of observation and less capable of self-analysis, I should have entitled this discourse, How to Grow Old Gracefully. The latter title makes a stronger appeal to my sympathies as I wish my remarks to have a practical ease of application and not be a mere enumeration of scientific data. I appreciate the complexity and difficulty of the task that confronts me, yet there are two assets in my favor which lend me sufficient assurance to proceed. The first is my own personal and subjective contact with this problem. Advancing years have necessitated a change in my own psychology, a change in thought reflected in modification of feeling and resultant behavior. The second asset is one acquired through years of experience with and observation of the problems of others, whose conduct has been more disordered than my own under the burdens of increasing limitations. In endavoring to aid the more objectively distressed, my own thoughts and philosophy of life have been challenged. I have been forced to consider what gives us personal assurance, what are successful compensations, what enables an individual to meet ever-recurring frustrations, and be able to face the future with assurance, hope and emotional equanimity.

I shall try to call attention to some of the factors at least which have been instrumental in restoring to health those with involutional ills; but, and what is even more pertinent in our present prophylactic era of medicine, I shall dwell at greater length on what it is that sustains those who withstand the vicissitudes of involutional alterations with an external composure.

The fact that we are meeting here today for the creation of a new medical society, the American Geriatrics Society, for the study of the prevention and treatment of diseases of old age indicates there must be an urgent need for the attention of the medical profession to a consideration of such problems. This need doubtless arises from the fact that there are more elderly people in this country than ever before. Overholser states, "Whereas in 1900 approximately 4 per cent of the population were over 65 years of age, in 1935 the proportion had risen to 6 per cent; and it is authoritatively estimated that by 1980 approximately 15 per cent may be expected to fall in this age group."[1] He also mentions the fact that it is doubtful, indeed, whether any medical school at the present time has a chair of geriatrics. This is a matter certainly worthy of our attention.

In my contribution to this meeting I wish as a psychiatrist to approach this problem from that point of view, for the psychiatrist is challenged as well as the physicians in other fields of medicine. Overholser gives us factual indication of this.

"A good deal of concern has been caused to administrators of mental hospitals by the startling increase in admissions to those institutions of persons 60 years of age and over. In the decade 60 to

*Read in the Organization Meeting of the American Geriatrics Society meeting with the American Medical Association, June 11th, 1942, at Atlantic City, New Jersey.

69, for example, the admissions per 100,000 of the general population increased in the quarter century 1910 to 1936 from 114 to 191, or 67¼ per cent, and those in the age group 70 and over increased from 184 to 418, or 181 per cent. Indeed, the increase in admissions to mental hospitals for psychoses due to cerebral arteriosclerosis has increased 536 per cent in 25 years! It is facts of this sort which enable Dayton in his recent volume, *New Facts on Mental Disorder,* to state categorically that 'mental disorder is a disease of old age.' "[2] They are mentioned here as indicating the possible interest to the general practitioner of a brief consideration of some of the mental problems of aging and their management.

Of course the ideal time to prepare for the involutional epoch is in youth. To have weathered the storms of adolescence with externalized interests and duties which have replaced the subjective and introspective uncertainties attendant upon maturing is gratifying. With the satisfactions that accrue through the demands made upon us in business and the professions, we lose much of our conscious subjectivity. We cease to think about the future and live in the immediate present.

This has many advantages for the time being, but it is contingent upon a complacency that is apt to release later fears and anxieties. In youth we are creatures with many interests and a somewhat rebellious spirit against the existing order of things. As we grow older our sphere of interests narrows, we become more conservative and we accept our daily routine. Daily cares and responsibilities absorb our minds and leave little time for breadth of vision, for contacts in other fields of endeavor, for reading anything in criticism of our views, or for observing what is going on in the world about us except as it is imparted to us by our immediate colleagues, the local newspaper, or the gossip of the country club. Our wives may persuade us to read the latest best-seller, but our views are prejudiced before we start by book reviews or the remarks of our confreres at the luncheon table or on the golf links.

We pride ourselves on our interest in athletics and our ability to take exercise. Some of us attend football or baseball games and on Sundays, when the weather permits, we compensate for our usual inactivity by playing several sets of tennis or at least eighteen holes of golf. Then we retire to the locker room and satiate our tissues with good old Scotch or Bourbon, go home, and fret our families. Others of us are more considerate. We attend church with our families and then drive from a hundred to a hundred-and-fifty miles and eat a hearty dinner at some widely publicized roadside inn and return. But in either case we awake Monday morning and wonder why we feel tired.

We believe we are living the good life. In the Northeast we always vote the Republican ticket, watch the stock quotations on U. S. Steel and American T. and T., attend services of the Catholic, the Episcopal or the Congregational church, give money to the local charities and feel sorry for the farmers further west. In the South, we have a more direct concern for the agricultural interests, we carefully watch the fluctuations in the price of cotton and corn, are of the Baptist, the Methodist or the Presbyterian persuasion, and maintain the Solid South tradition by always voting Democratic.

We work hard, we accumulate wealth, we lay up monetary treasures, and pray that our children may never have to work as hard or know the vigorous discipline to which we have had to subject ourselves in order to succeed. We try to compensate for what has made us successful by making it easy for our progeny—and so deprive them of the essential tasks and tests which have strengthened us!

We acquire habits and patterns of procedure and become slaves to them. As long as there are no sudden changes necessitated and no great frustrations, everything seems to go all right. We more-or-less take it for granted that we will continue maintaining the *status quo* indefinitely. We think, but our thinking is severely conditioned for us by our daily routine. We think the same things over and over. Outside of our chosen field of endeavor we find ourselves at a loss, and we are uncomfortable when thrown in with people who live or think otherwise than ourselves. We lead active and busy existences, but when we suddenly find ourselves alone and have time for reflection and uninterrupted thought, we become uncomfortable. We don't know what to do with ourselves. We have no inner resources that will enable us to relax. Our friends, who are likewise affected, pity us. If we have opportunity to remain alone for very long they are soon calling us up and arranging for our entertainment. Consequently we become conditioned to a too circumscribed and rigid way of doing things and lack the training and the resources, physical and mental, for being comfortable in any other environment or with any other class of people.

This is all fine for a while, but changes are inevitable. For ten, twenty, possibly thirty years we lead this active existence. We pride ourselves on never being absent a day from the office. We tell others how well we feel. We express pity, while feeling contempt, for those who fall by the wayside. We hear of someone we have always envied and considered even more successful than ourselves committing suicide or being killed in an automobile accident in the early hours of the morning returning home from a roadhouse. We are perplexed. We fail to understand such calami-

ties occurring to our friends when at the peak of their success. But our own activity causes us soon to forget.

And then, more suddenly than we can anticipate, something happens to us. There is a slump in the market and we are financially ruined. There has been a merger of the company with which we have had employment and we are thrown out in the cold. We are told without previous warning that we must retire, more often without than with a pension. Possibly, if we have established our own business, our sons have grown up and taken over its active management. We find ourselves in the way and our ideas are considered antiquated by our juniors. Or we may decide in our declining years to move into a more socially prominent neighborhood, have a larger house, and entertain more lavishly. On the other hand the necessitated change may be due to physical rather than social or economic reasons. We have precordial distress and are advised by our physician to take things more easily and relinquish our duties to others. An old tuberculous lesion is awakened to reactivity. We are beset with failing vision or an embarrassing deafness. Or our sense of security and dependence may be disrupted by the loss of someone close and dear to us, with a resulting disturbance of function in which the physiological and psychological factors cannot be differentiated.

In any case something has occurred that necessitates a complete change in our ordered existence. We have to give up our old habits. This requires acquisition of new outlets for our energies and the development of new conditioned reflexes. A difficulty arises in having sufficient resiliency and zest, not only to find new habits of response but also to condition them. This is a painful process, unless we have had sufficient insight and judgment in earlier years to start a conditioning of some new reflexes at that time, rather than to have to start suddenly doing so at the time of our greatest inadequacy.

This is something that should be brought to the attention of any active and busy man during his years of productivity and not when he has suddenly snapped or been overwhelmed with what seemed like insupportable frustrations. The time to prepare for a blitzkrieg is years in advance and then it may never come.

Psychiatrists should have other duties than going around closing stable doors after the horse has been stolen. They should be called in consultation by the family physician or general practitioner when the latter is making his annual or semi-annual examination of his patient, when the patient is reasonably healthy at thirty or forty; rather than at fifty or sixty when psychological as well as physiological dysfunctions, and possible organic damage, has occurred. The psychiatrist should be possessed of sufficient wisdom to coöperate with the medical practitioner and outline a course of procedure that will anticipate psychological as well as physiological change and enable the patient to be adequately prepared.

If such an ideal arrangement can be effected, what is the duty of the psychiatrist? What should he tell the patient? To have a sufficient perspective of the patient to be adequate in his advice will necessitate the psychiatrist seeing the patient—or in this instance perhaps client would be a better term—several times and gaining his confidence.

Under such conditions generalities are dangerous. Each individual examined will present different problems and require different advice. There are however certain principles that apply to all.

The first thing to do is to start the client thinking about things of which he has not been conscious for many years and also of things that may be novel to him. The client must be taught to take time for reflection. Then he must learn what it is healthy to be reflective about. He must be instructed how to develop psychological or inner resources as well as monetary or material ones. He must learn to be tolerant not only of himself but of others. A question will arise not so much about what he does as how he does it. He must have the courage of his convictions, but he must also acquire a flexibility of thought, that will enable him to change his attitudes when confronted with reality that makes such a change necessary in order to keep a rational perspective of what is going on about him. He will soon find that it is not so much a matter of prohibition as it is one of temperance in all things.

"Whither goest thou?" should be the theme for these hours of reflection. He should have an honest appraisal made of his psychological assets and liabilities, of his instinctive desires and his emotional life. My listeners will challenge me here and exclaim, "Doctor, you are wasting our time. Turn him over to a psychoanalyst and let him be analyzed." But be patient with me for a few moments and let me explain further. Many such clients can neither afford the time nor withstand the rigor of a psychoanalysis. We do not always require a surgeon to cure a peptic ulcer. In some cases we might do more harm than good if we resorted to surgical intervention. Patients are not always cured by psychoanalysis. It is always easier to take a watch apart than to put it together again. Psychosynthesis is as important as psychoanalysis. After we have made our client aware of his limitations, we are duty bound to point out how he can live comfortably in spite of them and find satisfactory compensations. It is also the duty of the psychiatrist to know just how

far to go in revealing limitations to a patient or client.

Our client may be a person of strong religious convictions. We should not disabuse him of his faith. It is said that man cannot live by bread alone. Neither can he live by faith alone; faith without works profiteth nothing. But if a man has the right kind of faith, he will work. We should make use of his faith in helping him, but point out any obvious inconsistencies, which make his faith a weakness rather than a strength. We should in any case endeavor to make him tolerant of the faith of others and charitable in his attitude towards them. We should know enough about all the prevailing faiths to make him aware of what they have to offer one in distress and avoid dwelling on what we consider their limitations.

We have a broader field when we approach social, economic and political problems. Here we should have sufficient knowledge of such subjects as to start our client thinking about them. We should advise as to his reading and becoming better oriented. If a Republican he should be advised to read Democratic newspapers and to learn something about more radical theories. If he is to be critical of socialism and communism, he should have sufficient knowledge of their theories to know why they are not workable in a democracy, but he should also know why adherents of such beliefs serve a useful purpose as long as they remain minority groups. He should appreciate their critical value and not be eager for their extermination. The more tolerant one can become of others, the more tolerant he will be in his attitude towards himself. We all know how lack of self-tolerance predisposes towards the involutional psychoses.

As regards sex our client should learn that it is as much a biological as it is a moral problem. He should learn to be charitable in his thinking and attitude towards those who possess greater urges and less self-control. The psychiatrist should point out to these clients when advice is sought about having affairs, about marriage, divorce, the question of having children, and allied questions, that those raising such queries have already made up their minds about what they are going to do. Point out to them that they are coming to you not so much for your honest opinion as they are to have you confirm what they have already decided upon themselves. Inform them as to what the consequences or dangers may be, but let the final decision rest with them. If you wisely remain silent about such final decisions and leave it to the client to make them, he will doubtless curse you silently later because of your superior wisdom, when things do not turn out as he has wished. But this is certainly far better than having such clients broadcast your remarks as reasons for their inadequacy or difficulty.

In planning for the future and formulating an optimistic and stablizing philosophy, there are many things to be considered; many things which can be worked out only by thought. While many of the things about which I wish to treat may seem of a somewhat idealistic philosophy difficult of achievement, I want to point out that it is not so much the question of a full accomplishment of this philosophy as the joy and satisfaction that comes through working at it.

It is seeking perfection, rather than attaining it, that makes life worth living. The Golden Fleece or the Holy Grail are wonderful sources of inspiration and endavor; but, after we have once acquired them, we must sit with Alexander and mourn for new worlds to conquer. As we look back over our lives, the greatest satisfaction that can come to us is that of each year having done something a little better than the year before—each year having known a little more, of having been more content with those around us, of having made them more appreciative of our value, and of having come to realize that we have never lost that one most invaluable possession, the capacity of development.

This capacity of development enables us to do many things. It keeps us dynamic. It makes us receptive to new ideas. It enables us to be temperate in our balancing of what it is advisable to retain of the old and what it is advisable to add unto it of the new.

In illustrating this capacity of development, especially with those who are inclined to belittle their ability or innate capacity, I have often made use of the parable of the talents in the Bible, a parable which it took me years to understand. For some unexplainable reason, it kept recurring to me through my youth and my sympathies were with the young man who had only one talent and who went and buried it in the earth. I thought what else was there for him to do when his associates had so many others with which they could do more-or-less as they wished. It took years for me to appreciate that each of us receives different talents, both quantitatively and qualitatively, and that then it is left to us to make what use of them we will. The individual with only one talent can double that as readily as those with two or five talents can double theirs.

But even here, one has to use discretion in making use of such an argument. It may have disagreeable repercussions. I once established a severe negative transferrence with a patient by using this method of illustration. It turned out that I was doing exactly the same thing with him that his

father had done years before. He had hated his father for always quoting the Scriptures and that hate was carried over to me in his identification of myself with his father.

It would appear to me that the best way to prepare individuals for the involutional period would be to make them aware of the inevitable changes that are necessary both in their thought and their actions. As we approach this period we become less active physically but we can compensate for this by indulging in greater cerebral activity. We should use our bodies less and our thought processes more. We have been struggling for success in the stream of life. In that struggle we have rarely ceased and looked about us. How often have we stopped to consider what we are really struggling for? The involutional period may force us to stop; but how many have been able to look about them then and figure out what life is all about or what they are going to do with their lives now that they have had to refrain from their usual activities.

We should practice looking about before the inhibiting changes of involution completely overwhelm us. We should occasionally endeavor to get out of the stream of life to tarry on the bank and profit by the example of others who go swiftly by. We should learn to control our personal feelings and become more objective.

At times we should contemplate what we would do if the worst beset us instead of the best. We should learn to contemplate such a possibility with an assurance as to how we would handle the problem. To contemplate being left alone in the world with an inadequate or an extremely limited income, we must have inner resources. We must have something else to think about than our own misery or discomfort. We should also plan some way of being occupied during the declining years of life. While we may contemplate the worst, we should endeavor to have something better. We should plan for a simple existence, within the confines of what may be limited resources, but at the same time one that may give a certain degree of comfort.

W. Somerset Maugham has said that, while he would like to always possess the emoluments and perquisites which have been the rewards of writing; at the same time, if necessity demanded, he could be comfortable and reasonably happy in one or two rooms in a small country town, if he could have sufficient to eat, sufficient warmth and clothing, and access to a nearby public library. It is well sometimes to picture such a simple future for ourselves and then try to augment it as much as possible.

When we have reached the involutional period and have had difficulty adjusting to loss of position, health, dear ones, or the accustomed way of doing things, we are suddenly told we have led a too-restricted life. We are told we must develop hobbies and do things we have never done before. We must play golf or possibly tennis, go to the theatre, meet with associates of similar years, etc. This all sounds very well, but it has always seemed to me that the time to do these things was before the changes of involution had occurred and to be in condition to have them as assets later.

These assets I like to look upon as inner resources or something which we can make use of when alone, or something which will sustain us then and also in time of other personal need.

Now we all perhaps have contemplated doing many things when we retire. But suppose we retire and then find we are unable to do them. We may be too fat and stiff for tennis, or to grace a ballroom floor. Myocarditis may preclude even golf. Without previous familiarity, the legitimate drama may bore us to death. I was going to say the theatre in general and then I recall that musical comedies are as noted for bald-head rows as they are for their costumes décolleté.

In suddenly being confronted with the fact that there is something we have always wanted to do, but could not, a great deal of help is to be obtained from the philosophy that with every loss there is some gain. With less time for one thing, we inevitably have more time for another. If we cannot be as active physically, we have more time for reading, conversing and even listening to the radio. If we have to give up active participation in a business or profession, we have the benefit of our experience which we can give to others. We may become advisors or consultants where we were formerly doers. We can reflect, we can take time to formulate our views, and perhaps impart them in a useful or entertaining manner to others.

At the same time as we grow older we should endeavor to make ourselves acceptable to our associates. We should not be too fixed or decided in our opinions. We should endeavor always to remain young enough in spirit to remember that our way is not the only way, that what we enjoy may be detested by others. We should always endeavor to be impartial in our judgments. We should continue being receptive to new ideas. We should possess riches which are not subject to fluctuations of the market, the will of dictators, or the envy of the poor—of riches which neither moths nor rust can corrupt nor thieves break through and steal. What are these riches?

The first and greatest to my mind is a sense of humor—an ability to appreciate that some of the things we are most serious about are matters of inconsequence. For example, I loathe people who stand in my way in the middle of sidewalks, who stand in or near exits after a meeting, or who talk

out loud in the theatre or movie. Occasionally, however, I reflect a moment and am obliged to remember that I do the same things myself. It is amusing to observe how people who serve cocktails take it for granted that everyone will like cocktails. But what is more amusing is to observe that those who object to being served with alcoholic beverages are equally insistent on having those not so disposed take coffee after dinner.

I can readily see such inconsistencies in others; but only after repeated experiences could I meet the situation with peace of mind, when guests whose laps I had overburdened with books which had for me a special interest calmly put them aside and went on talking about other matters. It often amuses me to have my good friends, the isolationists, tell me about the advantages of keeping out of war. I sometimes think that Mr. Hitler and the Japanese are even more amused than I at my friends' lack of insight. Humor enables us to see and appreciate the inevitability of things without becoming shocked.

A second non-material possession of value is the enjoyment of one or more of the arts. To one it will be a painting, to another a symphony, to a third a statue, and to many more—because of the greater diversity of application and facility of acquisition —something they have read.

Glory be to God for dappled things –
For skies of couple-colour as a brindled cow;
For rose-moles all in stipple upon the trout that swim;
Fresh-firecoal chestnut-falls; finches' wings;
Landscape plotted and pieced– fold, fallow, and plough·
And all trades, their gear and tackle and trim.
All things counter, original, spare, strange;
Whatever is fickle, freckled (who knows how?)
With swift, slow; sweet, sour; adazzle, dim;
He fathers-forth whose beauty is past change:
Praise Him.

This poem, *Pied Beauty* by Gerald Manley Hopkins, gives us something for reflection to think of many times and appreciate the more with each reverting memory. I believe an author capable of such thoughts or a reader who can get inspiration from them is better equipped for the descent of life's pathways than he who can create an Empire State building. It can be argued whether the poem or the building serves the more useful or lasting purpose. Bombs may destroy the building but not the poem.

There are other non-material riches—communion with nature, love of animals, absorption in an intellectual project, joy of service to others, and so on *ad infinitum*—but my time forbids further enumeration and I wish to challenge your thought. My materially-minded friends, especially my patients, beset with involutional frustrations, tell me it is all very well for me to develop such enthusiasms, but they never had the time nor the interest for such things. I then explain to them that such interests have to be developed through personal desire, that they do not arise easily, but that any effort taken in this direction will be well repaid. A bust of Joan of Arc, sculptured by Monsieur de Francisci, stands in a hallway of a hospital in which I practice. It made little appeal at first. One day, I know not why, I stopped and looked at it, but there was little I saw. Later I went to a collection of Italian art in a museum. Here communion with others stimulated me to appreciation. I was especially affected by the lines of a marble Bust of a Lady, by Laurana. I bought a catalogue and read about the other exhibits and my artistic horizon was widened. On my return to the hospital I looked at Joan of Arc again. I saw lines similar to those of Laurana. I was more appreciative. I have returned to study this head many times, and each time I have been amazed at the studied grace and simplicity of the lines. Each time I do so, I think of Keat's words, "Beauty is truth, truth beauty." What I have written may sound like a fantastic rhapsody, but I find such emotional satisfactions adequate compensation for life's stern realities.

While I have been dealing largely with psychological factors, there is a need of the recognition of physical ones as well. It seems strange that our bodies, our most valuable tangible possessions, we appear to neglect most. If we treated our automobiles, our watches, or even our dogs as we treat our own bodies, we would soon be designated by that opprobrious euphemism *eccentric*, perhaps even have our conduct called to the attention of the authorities.

The need for a temperate, balanced physical existence is as obvious as for a balanced emotional and intellectual existence. We often go to physicians for advice, when, if they are honest, they will simply tell us what is self-evident and what we should already know.

We are at the present time giving much thought to the problem of the excessive indulgence in hard liquor which results in what we speak of as alcoholism, but how much attention do we pay to the drinking of too much coffee, tea, or carbonated water? The results are more insidious in their manifestations and undoubtedly less disabling, but nevertheless worthy of our attention. How many of our good neighbors, even among the prohibitionists, who pride themselves on their self-control, overeat? I venture to predict that a great many more of the world's population die from overeating than overdrinking. Over thirty years ago, Sir William Osler was cautioning us that, "We eat too much after forty years of age." He mentioned the famous George Cheyne, a man of enormous bulk who reduced himself by dieting from a weight of 448 pounds to proper dimensions. "One of his

aphorisms says: 'Every wise man after fifty ought to begin and lessen at least the quantity of his Aliment, and if he would continue free from great and dangerous Distempers and preserve his Senses and Faculties clear to the last, he ought every seven years to go on abating gradually and sensibly, and at last descend out of life as he ascended into it, even into a Child's Diet.' "[3]

Sleep is another important factor as one approaches the phenomenon of involution. Here as with the question of dieting, it would appear that with advancing years we would require as much rest at least, and possibly as much sleep, although there are individual variations, as does the child. I believe there are many neurotic symptoms that could ordinarily be kept under control which are released during periods of both mental and physical fatigue. Sleep is more essential to lessen physical fatigue. Mental fatigue on the other hand is more apt to lessen one's powers of sleep. Mental fatigue arises not so much from overwork, as it does from having to do something one dislikes or fears he cannot do well. A boy will kick a football the whole afternoon without evidence of fatigue, while fatigue could be produced easily in the same boy by a simple errand for his mother, or memorizing a few verses for Sunday School. Late parties, banquets, all-night poker sessions are things to eschew as one grows older except on rare occasions with the opportunity for more rest than usual afterwards. Vacations should be periods of quiet relaxation. There should be less action and more reflection during them as we advance in years. Sometimes in our prayers at night I believe it would be wise to seek deliverance from our friends as well as from our enemies. We know what our enemies are trying to do, but our friends have a more insidious way of demanding exactions that are sometimes more disturbing to our psychological and physiological adjustment than are the direct onslaughts of our foes.

I have injected these physical factors into a discussion in psychology, as we need to consider these physical factors as well in order to exert a proper psychological control over them. So often we hear people exclaim, "But I must have my exercise" or "Life would not be worth living if I did not have my coffee." I have endeavored to point out some of the things at least which may replace exercise or that might make life worth living and make us want to adopt other pursuits. I have also tried to show the close interrelation between the psychological and the physiological factors involved.

I have dwelt at length on how to prepare for the involutional period and prevent undue anxieties arising. Now the question arises what to do to bring those suffering from involutional psychoses back to their former emotional, psychological and physical level of adjustment. The latter is of course often impossible, but the factors that will bring them back psychologically are the same as those I have mentioned. The important function of the psychiatrist is to get the patient to externalize his interests. The psychiatrist must have externalized interests about which he possesses enthusiasms. He must try to inoculate the patient with similar extroverted enthusiasms. The psychiatrist must be versatile. He must keep trying until he hits upon some externalized interest in which t he patient can show some enthusiasm at least with him. It is obvious that the psychiatrist should not talk to the Catholic about the emotional releases of a Methodist prayer meeting, or to the Jew about the satisfactions of Christmas homecoming, or to the Baptist about the psychological implications of the Bar-mitzvah; yet he should have an understanding appreciation of the relative value of such experiences to the parties interested.

The involutional period should be one in which an individual can relax sufficiently from his usual business or professional duties to think about and indulge vicariously, if not directly, those desires and impulses that he repressed during his adolescence to become successful in his business or profession. There are some who have always been so absorbed with the task that has confronted them that they have never thought of any other indulgence. It is such as these who, when completely frustrated in carrying out what years of exactitude have conditioned them to, develop involutional psychoses. If we can awaken some spark that has been smoldering within since childhood for the indulgence in an avocation if not another vocation, the patient's prognosis is much bettered.

In conclusion, I would say that what keeps one well is a useful and constructive externalization of interests toward an activity in which one can perfect oneself and be of increasing service. This will prevent his attention to a preoccupation with what would otherwise be frequent personal distresses. But there is something equally important for maintaining this feeling of inner security and self-assurance through the involutional period. This is to accept the frustrations of one's accustomed gainful activities, not with any undue feelings of loss or privation, but to accept them as offering opportunities for an indulgence and application in those other fields of endeavor that we have always sought time for, but which the exactions of the moment have prevented.

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Discussion

Dr. Edwabd F. Falsey, Brooklyn:

Dr. Allen's happy emphasis on prophylaxis in involutional emotional disorders and his discussion of useful measures which the patient may inaugurate under the guidance of his physician long before the acute problems of ageing present themseives would seem certainly to provide an optimistic keynote in our approach to these conditions. Whether an emotionally comfortable negotiation of the involution can decrease the incidence or the severity of arteriosclerotic dementias, or alter the senile changes of a later period which have been responsible for the tremendous increase in admissions to mental hospitals, to which Dr. Allen has referred, is a very debatable point; but we do see repeatedly a consistent preservation of serenity in later life in those individuals who have become comfortable in contemplating inevitability at this period of involution.

In stressing the necessity for breadth of vision and for a wide range of interests, Dr. Allen has indicated those ways in which men and women with average ability to think, realizing as they universally begin to do that they will never find The Sleeping Beauty, or that a perfect Prince Charming will never come riding into their lives on a white charger (thus Dr. Preston has recently so aptly characterized the changing sex attitudes of this epoch), may, nonetheless, achieve genuine emotional satisfactions of great value.

Many of us are now seeing individuals whose life-long expectations of financial security in their old age have been seriously threatened by economic conditions beyond their control. Some of them seem baffled and appear to lack the variety of personality resources to which Dr. Allen makes reference in discussing those satisfactions which others do derive from the development of artistic appreciation in one direction or another. There is a permanence in the art forms from which solace may readily be derived. If one can relate the artistic interest to some social or group activity it is a happy circumstance.

As Dr. Allen has well indicated, it is impossible to omit discussion of physical factors in dealing with the psychology of the involutional period. Many of the points in this connection which he has reviewed may appear obvious, but they are so frequently neglected that their emphasis is clearly indicated. It is the fashion to discuss glandular therapy and omit much of this clinical common sense. There is in the entire discussion presented to us a dynamic approach to the problem in which it is possible for both patient and physician to regard as developmental the physical and psychological changes of the involutional period. This developmental attitude may prove a strong bulwark against the anxiety which follows upon the thoughts of death. These thoughts, common as they are at this period, are not in themselves threatening. We have reports from England in Dr. Gillespie's Salmon Lectures that the threat of physical dissolution may not nearly so seriously affect the suman personality as does the threat to the ego of loss of status and prestige.

In the later regard, it would be perhaps wise to indicate the vaiidity of concentrating primary emotional interest in one's own generation. We see young men and women encountering frustration in their attempt to achieve complete rapport and understanding with their parents; there are also repeated instances of older individuals trying with a sort of desperate intensity to live the lives of their children. At the Brooklyn Home for Aged Men and Couples, I have in recent months observed a group of people growing old together. The community of interest, the pride in their own generation, the good-humored tolerance of each other's children have been constructive in preserving individual morale. This has occurred in a group of people unacquainted with each other prior to admission. How much more satisfying would be a group interest at the earlier period of which Dr. Allen speaks. Whether this community of interest derives from a common religious viewpoint or a common cultural pursuit would seem curiously irrelevant.

At Long Island College of Medicine we are accustomed to describe the needs of human personality as four: (1) the need to be; *i.e.,* to enjoy physical integrity and health; (2) the need to belong; *i.e.,* to be part of a group of family or social unit; (3) the need to get; *i.e.,* to acquire return for our investment of energy or emotion in the form of material satisfaction or affection; and, (4) the need to beget; *i.e.,* to give expression to the creative instinct either biologically or in sublimated form in artistic or other constructive endeavor. Dr. Allen has mapped in clear outline the paths by which the individual may find satisfaction for these needs at the time of the involution, the ways he may follow within the boundaries of mental health to serene old age.

HISTAMINE IN THE TREATMENT OF NASAL ALLERGY

(L. Farmer & R. E. Kaufman, New York, in *Dig. of Ophthal. & Otolaryn.,* July.)

Histamine phosphate for the treatment of uncomplicated cases of tree, grass or ragweed hayfever is started 8 to 10 weeks before the onset of the pollinating season. During the first month the injections are given twice a week, thereafter, once a week until the end of the pollinating season—14 injections prior to, and 4 to 6 during, the pollinating season, a total of 18 to 20 injections.

The initial dose is 1 gamma (0.001 mg) if the patient (adult) shows no allergic symptoms at the time treatment is started. If the injections are well tolerated, subsequent doses are 2, 4, 8, 15, 30, 50 and 75 gamma. These 8 doses are given in the first month of treatment at about four-day intervals. The 9th to 14th doses are 100 gamma each and are given at intervals of one week. This leads up to the onset of the pollinating season, at which time the dose is reduced to 30 gamma and (if well tolerated) is continued at this height at weekly intervals to the end of the pollinating season. The total dosage according to this schedule amounts to 965 gamma. In children we begin with 0.1 gamma, increase the dosage by only 50 per cent and usually do not go beyond 50 gamma.

Of 72 ragweed cases, 24 were considered severe; in 7 of these a good and in 9 a fair result was achieved. Forty-eight ragweed cases were classed as moderate; in 19 the result was good and in 13 fair. These figures show that in 66 per cent of the severe cases a good or fair therapeutic result was obtained, the same percentage as in the moderate cases. Fifteen cases of grass hayfever were treated; 4 were severe and 11 moderate; in 9 a good and in 6 a fair result was achieved. The same satisfactory results were obtained in tree pollinosis.

We do not recommend histamine treatment in simple uncomplicated cases of pollinosis. Its use is indicated in those cases of hayfever in which specific desensitization treatment has not been successful, or in which it has caused severe reactions, and in cases of pollinosis in which there are also perennial manifestations of allergy such as asthma or perennial rhinitis.

The Senile Heart*

Lucien Stark, M.D., Norfolk, Nebraska

A PITY IT IS that we have not devised some name more descriptive of the condition which we are now to consider. The use of the term would imply that the heart becomes senile without that senility affecting other organs and parts of the body. That may happen but it is more apt not to, as, to my mind, senility is a general degenerative lesion rather than a lesion affecting one organ alone. In general, we can say that a heart becomes senile right along with the degenerative processes taking place in the body because of senescing or ageing processes. This process of ageing can be physiological alone or pathological alone, or can be a combination of the physiological and pathological. In 1928, Warthin wrote an excellent book on *Old Age*, and in this book he made the following observations: "The senescent process is potent from the very beginning; involution is a biologic entity equally important with evolution . . . its processes are as physiologic as are those of growth. . . . It is there, inherent in the germ plasm and no slur or stigma of pathology should be cast upon this process. . . . Senescence is due, primarily, to the gradually weakening energy set in action the moment of fertilization". This reasoning would cause us to believe that senescence is a physiological degeneration almost without exception.

In the same year, Tilney wrote an article on the ageing of the human brain wherein he said: "No evidence thus far adduced is sufficient to convince us that there is such a thing as a strictly old brain. The brain in aged people may present certain morbid changes; but these are, in their turn, incident to many pathological assaults upon the tisues sustained during life which, in some individuals more and in others less, are in all alike the consequence of infections, intoxications or other morbid influences. . . . All this is a strong argument in favor of the theory which held old age in the brain, as in other organs, to be the result of life's successive and accumulative intoxications". At another point in this same article he states: "According to this view, old age has a pathological background. It arises from definite conditions which may be combated or corrected". We have our choice of the two well worked-out theories. I believe they are both right, and that we have not only physiological ageing and pathological ageing in an individual, but a combination of the two.

We can say that a senile heart can be produced by damage to the heart muscle itself, to the blood supply to that muscle, and to a lesser extent damage to the endocardial tissues lining the auricles and ventricles of the heart and from which, principally, the valves are derived. We can have combinations of any two of these, or any one of them can start the senescing process and the terminal pathology be found in any other of these tissues.

On the blood-vessel side, probably the most potent factor in the production of a senile heart is arteriosclerosis. I am not going to open up the age-old discussion as to the causes of arteriosclerosis; it is a very controversial subject and, for our purpose, it makes little if any difference what brought it about: if it is present, that is enough.

This condition can also be brought about by any proliferative process taking place within the lumen of the blood-vessels of the heart so that the lumen is narrowed to the point where circulation and nutrition in that vessel and the region supplied by it are impaired. This can and does take place in arteriosclerosis, in cardiovascular syphilis and in a few other conditions where a proliferative process takes place in the intima of the nutrient cardiac vessels.

Still another blood-vessel condition which can and does contribute to, and even cause the production of, a senile heart is atheroma of the blood-vessels brought about by a bacteremia. This comes about by the bacteremia being responsible for the formation of numberless small abscesses in the intima of the cardiac vessels. These abscesses are so small as to cause no symptoms while they are in existence or when they rupture. Following their rupture, there is left in the wall of the vessel a small indurated area projecting into the lumen of the blood-vessel and this area invites the deposit of the mineral elements of the blood stream so that the vessels are stiffened and their lumen narrowed, impairing the distribution and the volume of blood to the areas so afflicted.

Hypertensive heart disease, however it originates, is still another cause of senile heart disease. The high pressure continuing over a long period of time destroys the contractility of the arteries, thus seriously impairing their ability to transport nourishment to the areas that they supply and extending a standing invitation to coronary embolism.

*Read in the Organization Meeting of the American Geriatrics Society meeting with the American Medical Association, June 11th, 1942, at Atlantic City, New Jersey.

Coronary embolism, while it involves the nutrient vessels of the heart itself, plays its part in the production of the senile heart. The senility produced by this condition had best be discussed under reasons for senility because of conditions in the heart muscle itself. If the patient does not die during the attack of coronary embolism, the pathological changes which contribute to the development of a senile heart are more of muscle than of arteries.

We can now take up the reasons for the production of a senile heart wherein the deterioration is principally of the muscle. We can start with hypertrophy developing over a long period of time, with, from time to time, attacks of acute dilatation. This condition occurs most frequently in hypertensive heart disease regardless of the reason for the hypertension. Hearts hypertrophy from excessive work just as does any other muscle. Just before hypertrophy begins there is a dilatation. At the time of the dilatation, the fibres of the heart muscle were stretched to what was, at that time, their greatest possible length. This decreased the heart's capacity for work; but, with the fibres extended their full limit, the beginning hypertrophy increased the reserve power of the heart and with it came the power to maintain the circulation even in the face of the increased demand for power brought about by the hypertension. This condition continued over a long period of time with an ever-increasing demand for cardiac power until the elasticity of the fibres was exhausted. There was no opportunity for further hypertrophy and a terminal dilatation started which brought about what we call senility of the heart muscle, based entirely on a muscular background.

The infections have their effect on the heart muscle just as they do on any other muscle. These effects can come through the *endo*cardial infections, the *pan*cardial inflammations or from *peri*cardial infections and inflammations. The most frequent cause of these conditions is rheumatic heart disease. In rheumatic hearts that come to postmortem, you will find edematous areas in the muscle itself and many times some lipid, probably cholesterol, separating the fibres and within the fibres themselves. When syphilis attacks the heart muscle the attack usually follows on syphilitic involvement of the elastic and muscular coats of the aorta. It destroys the muscle, and with its repair comes scarring, which goes a long way toward the development of senility of the heart.

As the coronary vessels are the nutrient vessels of the heart, anything in any way impairing their efficiency has an injurious effect on the heart muscle itself. If it is a progressive occlusion, the nutrition to the muscle is impaired slowly and a gradual degeneration takes place. If the impairment is due to an embolus, ischemia of the muscle beyond the point of lodgement of the embolus is produced and degeneration begins, which leads to sloughing in that area, and, in favorable cases, to physiological repair of the area and scarring. After many attacks of this kind the heart becomes senile because of this scarring and in that way the residual morbid anatomy lies in the muscle itself. This could be called a traumatic origin of senile heart; but, as this residual pathology is all in the muscle, we will let it remain under the muscular head.

Metabolic disorders can be and are responsible for the production of many senile hearts—*hyper-* or *hypo*thyroidism, *hyper-* or *hypo*adrenalism, *hyper-* or *hypo*pituitarism, and *hyper-* or *hypo*glycemias. Either an over, or an under, activity of the thyroid, adrenals or pituitary brings about an exhaustion of the heart muscle, and in the process of repair lies our damaging factor. Exhausted muscle does not easily rehabilitate and again we encounter muscle edema and scarring in the heart muscle. Hyperglycemia is very apt to produce a partial occlusion in the terminal arterioles impairing the nutrition of the muscle in that area. It limits the volume of blood and its ability to circulate. In a state of hypoglycemia a diminished amount of sugar is delivered to the heart muscle so that there is insufficient food for the muscle. Heart muscle is nourished by sugar derived from stored glycogen just as are the other muscles of the body.

Among the agencies which can produce a senile heart, and which have not had the attention paid them that they deserve, are the blood dyscrasias. Anemia of any type can affect the nutrition of the heart muscle to the point where the onset of senility is a natural outcome. The leucemias, principally of the myelogenous type, also have their method of bringing about a senile heart. The terrifically high white counts can make it relatively impossible for enough red cells to get into the smaller vessels so that the muscle can have nourishment so the senility takes place because of nutritional defects.

The inordinate use of coffee and/or tobacco also plays its part in the production of a senile heart. Both of these agents contract blood vessels and if kept up over a long time a spasm of the muscular coat of the vessels results and, by spasm of the vessels limiting the amount of blood delivered to the heart, contributes largely to the development of a senile heart.

Improper diets and vitamin shortages also play a part in the production of a senile heart. In pellagra as well as other vitamin-B shortages we may find the beri-beri heart of Levine, and these patients develop a senile heart long before it would have been brought about by nature. Then, there is another group, principally women, who, wishing

to maintain their sylph-like forms, confine themselves to some diet containing virtually no carbohydrates. These are the people who have repeated attacks of hypoglycemia, which I have seen labeled epilepsy. They do not get enough carbohydrates into themselves to avoid these attacks of hypoglycemia, and certainly there is not enough of carbohydrate intake to manufacture sufficient glycogen to nourish their muscle structures and the heart muscle suffers right along with the rest.

The treatment of these hearts must be based on whether or not the senility is due to causes physiological, to causes pathological, or a combination of the two. Above all things, do not over-treat them. Most of these people are more than sixty years of age, and you cannot expect to rebuild either musculature or blood vessels in an individual who has arrived at the point where about all the surplus cells that he can produce are utilized in maintaining his daily routine. A plan for living must be made that shunts such patients aside from much of the stress and strain of our modern life. They must be properly nourished. They must have sufficient rest and be protected from both physical and emotional shocks. Those with the beri-beri type must have vitamin B. Give it in dosage large enough to give the result you seek. Don't follow the recommended dose too closely. In the hypoglycemics, insist on enough carbohydrates in their diets to prevent attacks of hypoglycemia as well as to nourish the heart muscle. Insulin can well be given with carbohydrates even if no diabetes exists. Those with high blood cholestrol fractions can be treated with thyroid to better metabolize their fat intake and, perhaps, prevent the development of an arteriosclerosis. Diabetes must be adequately treated, best with a high-carbohydrate diet and enough insulin to control the sugar output. Do not permit these old people to get onto a high-fat, low-carbohydrate diet. Perhaps many of them will object to using insulin, but they will be much better when insulin is used. I know of no better way to produce high concentration of cholesterols in the blood than that diet used in the preinsulin days for diabetes. Whatever amount of insulin is necessary to control their sugar, see that they get it; and feed them enough glucose-producing food that they may develop enough glycogen to properly nourish their muscles. Those that have any of the anemias need to have them treated. Differentiate the type and direct your treatment at the type of an anemia that is present. These patients will never be in as good condition as they were prior to the anemia, you cannot make them better than fairly good, but you can do that. In those with a leucemia, again differentiate your type of leucemia and treat it accordingly. X-ray treatment gives a great deal of comfort to the leucemic, and these people are entitled to all the comfort that they can get in their declining years. In those cases where you might wish to better control nervous mechanisms, do not forget that the bromides are a bit safer than the barbiturates. The barbiturates function well, but the benzyl radical present in all of them can easily produce an agranulocytosis which in my own experience with old people has invariably proven fatal.

Above all things, locate the reason for the oncoming or the present senility, treat it sensibly, do not over-treat; and bear in mind that your efforts are being expended in trying to repair a very old, certainly badly worn and perhaps badly damaged piece of human machinery.

EARLY VERMONT DOCTORS

(A. M. Cram, Bridgewater, Vt., in *Jl. Assn. Am.. Med. Col.*, July)

Dr. Jones Fay was surgeon under Ethan Allen at the time of the capture of Fort Ticonderoga in 1775. The same year, Dr. Reuben Jones, at the Westminister massacre, likely stanched the first blood shed in the American Revolution.

Dr. Stephen Powers, one of the early settlers of Woodstock in the spring of 1775, on hearing of military movements in Massachusetts, went down there a short time before the battle of Bunker Hill and was present on the battlefield while the fight was going on and assisted in caring for the wounded. Dr. Powers, a man who did not care for personal adornment, wore a pair of trousers made of buckskin which he wore even to the close of his life in 1809. He made handy use of this garment in sharpening surgical instruments when performing operations. His name was widely known among the learned in his profession.

When final action was taken on the independence of Vermont, in 1777, that document was signed by four delegates, two of whom, Jonas Fay and Reuben Jones, were doctors.

Dr. Silas Hedges of Clarendon was a surgeon in the Continental Army under General Washington. Dr. Frederick Aubrey of Bradford was a surgeon in the British Army and dressed the wounds of General Wolfe at Quebec.

Vermont had no law governing the practice of medicine until 1876, except from 1820 to 1838, when the right to collect fees was regulated.

A number of doctors educated abroad came to the Colonies and practiced and taught students who, in turn, practiced and taught other students until the degree of medical education became sadly diluted. Up until 1765, all medical education in this country was under the preceptor system. In that year, the medical school of the College of Pennsylvania was established, being the first medical school in the Colonies, followed by Columbia in 1767, Harvard in 1782, Queens in 1792, Dartmouth in 1798, and Transylvania in 1799. These medical colleges were not popular, all of them up to 1801 graduating only 312 physicians, an average of less than 10 per year.

Some of the preceptors became so popular that they were unable to instruct, without assistance, all students who came to them; so they gathered around them other prominent physicians and started this independent type of school. There was also another class, which was organized by medical societies and some schools were established by the joint action of state medical societies and colleges.

Address*

Cause and Treatment of Symptoms Secondary to Previous Operations on the Biliary System

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DISEASES of the gallbladder and the biliary system are the occasion for a large part of the surgery of the abdomen. In the decade 1931-1940 no less than 3826 persons died in Pennsylvania of disease conditions of which gallstone formation was a part. At the Geisinger Memorial Hospital, cholecystitis has been responsible for nearly 3 per cent of all the admissions, and in the last quarter century it has accounted for a little more than 9 per cent of all admissions to the surgical service of this hospital. For many phases of this disease process medical treatment is indicated; however, in most instances permanent cure can be had only through surgical measures.

In late years cholecystectomy has become one of the commonest of surgical procedures, while cholecystostomy, the operation of choice of most surgeons in most cases of gallstones a decade or so ago, is now chosen for few cases. Removal of the gallbladder, especially the gallbladder with stones, has given as prompt and permanent relief, and been attended by as little risk, as have any of our major abdominal operative procedures.

Table I
Secondary Operations Upon Gallbladder and Bilary Ducts

Total number of gallbladder patients.....	2620
Number requiring secondary operations....	149 (5.6%)

Most patients suffering from gallstones or inflammations of the gallbladder and biliary ducts, and having no stones, obtain cure following extirpation or drainage of the gallbladder; but in a certain number of cases, after temporary improvement, surgeon and patient will be disappointed by a return of symptoms of such severity as to require a second, and possibly a third, operation. Manifestly, it is in order to make a careful study of this group with the thought of ascertaining the cause of the recurrence of symptoms and the best procedure to follow in handling the individual problem.

Table II
Primary Operations on Gallbladder and Ducts
149 patients

Number operated upon previously at Geisinger Memorial Hospital	46 (31%)
Number operated upon previously elsewhere	103 (69%)

From a group of over 2500 patients operated on by myself for cholecystic disease, I have selected consecutively those patients who have been operated on previously at least once, either by me or by other surgeons, and who have returned for further surgical care. The number of such patients is 149—5.6 per cent of our entire group of gallbladder cases.

Few surgeons in this country question the wisdom of removing the gallbladder when it contains stones, or of removing those not containing stones which are definitely diseased. However, the author believes that in many cases which go into the records as non-calculous cholecystitis, the gallbladder is removed unnecessarily. In the study of the series being reported on, many patients' secondary operations were required largely because of a previous operation, usually a cholecystostomy, which in all probability was done on a normal gallbladder. A gallbladder once drained is never thereafter a normal gallbladder, even though the abnormality be from adhesions only.

Table III
Sex Incidence

Male	24 (15%)	Female	125 (85%)

Table IV
Primary Operations

	Cases	*Per Cent*
Cholecystostomy	100	66.6
Cholecystectomy	28	18.6
Cholecystectomy and choledochotomy..	6	4.0
Cholecystectomy and choledochostomy	3	2.0
Explorations (gallbladder normal)	1	0.7
Multiple operations	11	7.3
Total	149	100.0

Our group includes 100 patients who had previous cholecystostomies, most of these operations having been performed elsewhere. Relief was afforded for the average period of 3.7 years, the average interval between the first and the second 8.1 years. So it is seen that whereas the patients were relieved for at least three or four years, usually there was an interval of twice that length, during which the patient suffered from a recurrence of

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Since this Address was delivered the substance of it has appeared in the Pennsylvania Medical Journal's June issue. The tables and summary in the two publications are the same.

symptoms, before he sought relief by a second operation. Of the gallbladders removed at the second operation from the 100 patients who had previous cholecystostomies, 58 per cent contained stones, which had been overlooked at the first operation or had formed subsequently. Seven patients of this group suffered from acute empyema at the time of the second operation. Of the series of 149 patients, 34 per cent required a choledochostomy in addition to a cholecystectomy at the second trip to the operating room; this largely because of stones found in the common duct, either having reformed or, in most instances as we must conclude, having been overlooked at the first operation. Of the 100 patients who had a previous cholecystostomy, 37 yet experienced severe symptoms. In 33 per cent of this group, stones were found in the common duct, yet in the remaining two-thirds no stones were found. However, in six patients of this group, whereas there were no stones in the common duct, there was a common-duct stricture, the result in most instances of trauma of the duct at the performance of the previous cholecystectomy.

Table V

Degree of Relief and Time Intervening Between Primary Cholecystostomy and Secondary Operation (100 Patients)

	Average Duration of Symptoms Following First Operation	Average Time Between First and Second Operations
No Relief—20%	4 yrs., 5 mos.	4 yrs., 5 mos.
Some relief—80%	2 yrs., 11 mos.	7 yrs., 7 mos.

Table VI

Degree of Relief and time Intervening Between Primary Cholecystectomy and Secondary Operation

	Average Duration of Symptoms Following First Operation	Average Time Between First and Second Operations
No relief—40%	2 yrs., 4 mos.	2 yrs., 4 mos.
Some relief—60%	2 yrs., 10 mos.	4 yrs., 3 mos.

Table VII

Jaundice Following Primary Cholecystostomy (Operative findings in 54 patients at second operation)

	Cases	Per Cent
Dilated common duct with stones	29	53.9
Dilated common duct without stones	11	19.2
Common duct appeared normal	8	15.4
Empyema	3	5.8
Pancreatitis with obstruction	2	3.8
Carcinoma of the gallbladder	1	1.9
Total	54	100

Fifteen of the group of 149 were readmitted because of chronic post-operative biliary fistulae. Eight of these had had a previous cholecystostomy and were relieved by the removal of the gallbladder. Three of the eight required exploration and drainage of the common duct. All of the patients of this group of 15 were cured by excision of the sinus or of the gallbladder, or by various plastic operations on the common duct. Of the entire group of patients requiring secondary operations, there was one case of carcinoma of the pancreas, one of the bile ducts, and one of the gallbladder. Eleven patients had been operated on twice before, while one had been operated on three times; in the latter instance the gallbladder had been opened and drained three times before the patient came to us, at which time a cholecystectomy was performed which effected a cure.

Table VIII

Types of Secondary Operations Following Primary Cholecystostomy

	Cases	Per Cent
Cholecystectomy	67	67
Cholecystectomy and choledochostomy	17	17
Miscellaneous	16	16
Cholecystostomy	5	5
Cholecystectomy and choledochotomy	4	4
Choledochotomy	2	2
Exploration and biopsy	1	1
Incision and drainage, pancreatic cyst	1	1
Cholecystectomy and transduodenal choledochotomy	1	1
Excision of sinus	2	2
Total	100	100

Table IX

Findings at Secondary Operation Following Primary Cholecystostomy (100 patients)

	Cases	Per Cent
Chronic cholecystitis with stones	62	62
Only gallbladder stones	33	33
Stones in gallbladder and common duct	29	29
Atrophic gallbladder (no stones)	11	11
Dilated common duct without stones	11	11
Common duct normal	8	8
Acute empyema of gallbladder	7	7
Carcinoma of gallbladder	1	1

Table X

Findings at Second Operation Following Primary Cholecystectomy (37 patients)

	Cases	Per Cent
Stones in common duct	13	35.1
Common duct normal	6	16.2
Common duct stricture	6	16.2
Pancreatitis	6	16.2
Marked biliary cirrhosis	3	8.1
Carcinoma of the pancreas and bile ducts	3	8.1

The mortality of the entire group of patients requiring secondary operations was 8 per cent. Excepting seven patients on whom mere explorations were performed for inoperable carcinoma, or at which time was found traumatic destruction of the ducts of such degree as to make surgical cure impossible, but including all patients having secondary operations on the biliary system, the mortality was 5.6 per cent. The mortality following 66 secondary cholecystectomies performed on patients

who had previously had drainage of their gallbladders was 1.5 per cent.

It is plain that these secondary operations were necessitated chiefly because 1) a drained gallbladder had been left in situ, 2) the common duct had been seriously wounded at the time of some previous operation, or 3) stones in the hepatic and common ducts had been overlooked or, occasionally, had formed since the first procedure.

Table XI
Pathology of Gallbladder at Time of Secondary Cholecystectomy
(85 patients)

Chronic cholecystitis with stones	51	(59%)
Stones in gallbladder only	38	(46%)
Stones in common duct also	13	(13%)
Chronic cholecystitis without stones	34	(41%)

While patients with cholelithiasis may live in comparative comfort, or even in entire comfort, the condition must be regarded as a continuous and progressive one, almost certain in time to extend beyond the confines of the gallbladder into the ducts, and to the liver, and frequently to the pancreas. The patient who has been informed that she has gallstones and who refused operation makes a grave decision which may cost her life. In considering our immediate problem of the factors leading to secondary operations, and in doing all those things which promise to help in reducing to a minimum the number of cases in which second or third operations will be required, the diagnosis of cholescystic disease must be arrived at early; once the diagnosis has been made, operation should be insisted on and the patient should accept it; and the operation must be skillfully performed and completely carried out with the removal of all stones wherever they may be, with the removal of the gallbladder in nearly every instance, and with sedulous care that no damage be done to the common or hepatic ducts.

Table XII
Incidence of Pancreatitis
1149 patients (present in 11%)

Gallbladder disease, especially the form in which there is stone-formation, is essentially a progressive process and it is a common condition. It is a fact of general knowledge that women are prone to form gallstones—probably one out of every eight or ten above the age of forty; but in many instances the condition never causes symptoms. It is a common experience of the pathologist to find at necropy extensive cholecystic processes in subjects whose histories contain nothing suggesting the presence of such disease. In the course of other abdominal or pelvic procedures, it is the frequent experience of surgeons to find a large mass of gallstones, and on looking back over the history and requestioning the patient find it impossible to elicit evidence suggesting their presence. Yet, who can tell in the given case at what pace the disease will progress or whether it will or will not become suddenly active, producing an acute empyema or an obstruction of the common duct with secondary involvement of the pancreas or liver? Gallstones are a menace in any instance and, once the diagnosis has been made, treatment should be instituted, which means a cholecystectomy almost always.

Table XIII
Incidence of Pancreatitis

Following primary cholecystectomy	23.5%

This study teaches clearly that the operation of cholecystostomy accounts, in a large measure, for recurrence of symptoms and for the necessity of secondary operative procedures; also, that cholecystectomies must be conducted skillfully, with the utmost attention to every detail, or third operations will be necessitated by resultants of traumatization of the common duct in the course of the primary operation for removal of the gallbladder. In the hands of the occasional operator whose experience is so limited that there is a possibility of his traumatizing the common duct, the patient is far better off having the gallbladder merely drained. As the late Sir Berkeley Moynihan so emphatically put it: "surgical treatment of tumors of the brain is for the tyro as compared with surgery of the biliary ducts." Out of consideration for our neurosurgeon friends we may admit that this is a bit exaggerated, but only a bit. No operation more completely taxes the judgment and technical ingenuity of the surgeon than that required for dealing properly with the advanced and complicated processes involving the biliary system secondary to long-standing cholelithiasis.

Table XIV
Incidence of Pancreatitis

Following primary cholecystostomy	8.7%

Although patients may live to be old harboring a great many calculi within their gallbladders, and in a state of symptomless good health: yet patients who have had gallstones for two years or more will have common-duct stones in 2 per cent; those who have had symptoms two to ten years years have common-duct stones in 9 per cent, and those patients having symptoms for ten years or over have stones in the common duct in 16 per cent. This incidence rapidly rises until the incidence of common-duct involvement may reach 50 per cent of the group. Extension of the disease beyond the confines of the gallbladder is likely, with serious secondary complications which increase with the passage of time almost in the ratio of geometric progression. Gallstone disease for five years creates a certain risk, but the patient who has gallstones for ten years incurs far more than twice that risk.

Complications increase more than proportionately to the duration of the disease, and probability of cure lessens with ever-increasing rapidity as the patient goes on without proper advice or refusing to permit surgical intervention. It is regrettable that these facts are not fully appreciated by all of our clinical friends. In the interest of this class of patients, I venture to suggest that perhaps they could be more fully appreciated by those specialists in gastroenterology who are inclined to treat some patients with known cholecystic disease interminably with a medical regimen—usually futile, time-consuming, and not infrequently clearly hazardous. A woman I recently operated on had been treated for gastric symptoms for five years, and came into my hands because of acute intestinal obstruction due to a gallstone which had perforated the duodenum through a cholecystoduodenal fistula, and which had passed into the ileum where it produced complete blocking.

This study has proved and has emphasized a conviction I have long held—that far too many patients are operated upon on a spurious diagnosis of cholecystic disease and are subjected to cholecystectomy on the diagnosis of non-calculous cholecystitis. Many exploratory operations have been done because of clinical symptoms only mildly suggesting cholecystitis; on examining the gallbladder no stones have been found, and on opening it a normal mucosa has been revealed. In such instances the abdomen should be closed and the surgeon should admit that a diagnostic error has been made. Instead, too frequently a cholecystotomy is carried out, leading ultimately to adhesions between the abdominal wall and the gallbladder which may of themselves produce symptoms which eventually bring the patient to the hospital clamorous for relief.

Table XV

Jaundice Occurred in 28 (75.4%) Patients Following 37 Primary Cholecystectomies

	Cases	Per Cent
No jaundice	9	24.6
Dilated common duct with stones	13	35.3
Stricture of common duct	6	16.2
Dense adhesions around common duct	3	8.1
Obstruction at head of pancreas	2	5.6
Miscellaneous	4	11.2
Total	37	100

A surprising number of reports appearing in the medical journals of the past few years are of cases in which operations have been performed on gallbladders in which no stones were present. In an examination of the typical contributions of this character, 30 to 40 per cent of the patients had "mild chronic cholecystitis," "non-calculous cholecystitis," or "mild cholesterosis," etc. It has not been proved that cholesterosis alone indicates need for cholecystectomy; certainly it is rare for a gallbladder that does not contain stones to require extirpation. Patients on whom I have performed cholecystectomies for non-calculous cholecystitis have too often been made worse. It is a lesson I learned many years ago. We rarely remove a gallbladder unless calculi are found within it. In our last 500 cholecystectomies, stones were present in 92.6 per cent of the cases.

Table XVI

Mortality

	Per Cent
Hospital mortality (total of 149 patients) following secondary operations	8.0
Eliminating seven explorations for inoperable carcinoma, hopeless destruction of ducts etc., but including all patients having secondary operations on gallbladder	5.6
Mortality following 25 secondary combined cholecystectomies and choledochostomies	4.7
Mortality following 68 secondary cholecystectomies	1.45

That there exists such an entity as non-calculous cholecystitis, which may produce severe symptoms releivable only by a cholecystectomy, no one will question; but it constitutes but a small percentage of the entire group of gallbladder cases. Patients operated upon merely on symptoms and whose gallbladders show no pathologic change are always made worse. "Fair, fat, and forty and belches gas" has accounted for a great deal of ill-advised surgery upon the gallbladder.

Summary

1. Of a group of 149 patients operated upon by the author for biliary-tract disease, who had previously been operated upon and continued to have symptoms, the percentage of those operated upon elsewhere was 69 as compared with 31 per cent operated upon in our own hospital.

2. It seems evident that secondary operations become necessary largely because of inadequacy of the first operation, cholecystostomy performed when a cholecystectomy was indicated, or stones overlooked in the gallbladder or in the common duct.

3. An important cause of recurrence of symptoms is trauma of the common duct at the time of the first procedure, usually a cholecystectomy.

4. Too many gallbladders are removed which contain no stones, which are the site of no pathologic process. It is rare that "non-calculous cholecystitis" is an indication for cholecystectomy.

5. Certain patients following cholecystectomy continue to suffer symptoms of biliary colic, and secondary operations fail to reveal a dilated common duct or obstruction of the ampulla, or calculi. Occasionally, these symptoms are caused by processes involving the pancreas or the duodenum, or

the right kidney or ureter, the presence of which has been overlooked.

6. Cholecystic disease is generally progressive. However, no one can tell which patient will remain symptom-free, or which will develop common-duct obstruction, jaundice, obstruction of the cystic duct with empyema, infection of the entire biliary system, acute pancreatitis, or acute rupture of the gallbladder; so, once the diagnosis is made, the indications are for prompt surgical intervention.

7. Treatment should be early and mainly surgical. Temporizing with other forms of treatment is largely futile, time-consuming, and often dangerous.

8. Any operation performed should be done skillfully and completely, with the greatest solicitude for the common and hepatic ducts, and all stones must be removed wherever they may be .The gallbladder should be removed almost invariably. A cholecystostomy should be performed only on patients desperately ill, or in certain cases of empyema, or in cases of chronic pancreatitis when long-continued drainage is desired.

9. Opening and drainage of the common duct is called for if it is enlarged, if there has been a history of jaundice, or if stones are palpated within it. The surgeon must be equipped with the proper armamentarium. Nothing is easier than to open the duct and still miss stones, particularly small ones impacted in the ampulla. In the search for the elusive calculus in the common duct, no instrument is of such aid as is the Desjardins scoop and, next to it, the thumb and forefinger of the surgeon's hand.

10. Finally, if we are to obviate the necessity for second operations on the biliary system, no patient's gallbladder should be removed, or even drained, unless it is clearly diseased; then it should be completely extirpated.

RECIPES OF A FAMOUS CHEF OF KING RICHARD III, OF ENGLAND

Time of Chaucer

Cok a Grees
(Cock and Wild Pig)

Take and make the self fars; bit do thereto pyn and sug. Take an hole raosted cok, pulle hy (in pieces) and hylde (cast) hym al togg'd, saue (save) the legg. Take a pigg and hilde (skin) hy fro the mydd' donward, fylle hi ful of the fars and sowe hy fast tog'd. Do hy in a panne and seethe hy wel, and when thei bene isode, do he on a spyt and rost it wele. Colo it wt zolkes of ayren (eggs) and safron. Lay theron foyles (leaves) of gold and of silu', and sue hit forth.

For to Kepe Venison Fro Restyng

Tak Venison wan yt ys newe and cuver it hastely wyth Fern that no wynd may come thereto, and wan thou has ycuver yt led yt hom and do lt in a soler that sonne ne wynd may come ther'to and dimembr' it and do yt in a clene water and lef yt ther' half a day and after do yt up on herdeles for to drie, and wan yt ys drye tak salt and do after thy venison axit and do yt boyle in water that yt be so salt als water of the see and moche more and after let thé water be cold that it be thynne and thanne do thy Venison in the water and lat yt be therein thre daies and thre nytz, and after tak yt owt of the water and salt it wyth drie salt ryzt wel in a barel and wan thy barel ys ful cuver it hastely that sunne ne wynd come thereto.

For To Do Away Restyng of Venison

Tak the venison that ys rest and do yt in cold water, and after mak an hole in the herthe and lat yt be thereyn thre dayes and thre nyzt, and after tak yt up and spot it wel wyth gret salt of peite (saltpetre) there were the restyng is, and after lat yt hange in reyn water al nytz or mor'.

Gele of Flessh

Take swyn' feet and snowt' and the eerys, capons' conyin'g, calu' fete, and waische he clene, and do he to seethe in the thriddel of wyne and vyneg and wat and make forth as bifore' (See recipe on fish jelly).

Lenten Fish-Soup

Take the blode of pykes oth' of cong (conger eel) and nyme the panc'h of pykes, of cong and of grete code lyng, and bolle he tendre and mynce he smale and do he i that blode. take crust' of white brede and styne it thurgh a cloth. thenne take oynons iboiled and mynced. take pep and safron wyne. Vyneg aysell oth' aleg and do th'to and sue forth.

Gele of Fish

Take tench, eelys, pykes, turbut and plays, verue (carve) he (to) pecys. scalde he and waische he clene. drye he wt a cloth. do he i a pane. do th'to (thereto) half vyneg and half wyne and seethe it wel. and take the Fyssche and pike it clene. cole (strain) the broth thurgh a cloth ito an erthen pane. do th'to powdo of pep (pepper) and safron ynowh. lat it seethe and skym it wel whan it is ysode. dof (do of) the grees clene, cowche fisshe on chargeos and cole the sewe thorow a cloth onoward and sue it forth.

Benes Fryed

Take benes and seethe ne almosa til they bersten, take and wryng out the wat clene. Do thereto oynons ysode and ymynced and garlec 'pwt fry hem i oile, or i grece and do thereto powdo douce (pepper) and sue it forth.

'Re Smolle

Take almand blanched and draw hem up with wat (water) and alye (thicken) it with flo of rys and do pto (thereto) powdo of gyng (ginger) sug and salt and loke it be not standyng (thin or diluted) messe it and sue it forth.

Blank Mang

A preparation call *blank mang* was described in the following manner. The rice which had been soaked in water for a night and on the morrow washed clean was put upon a strong fire until it burst, but not too much. Then brawn of a capon or hen was taken and drawn small. Milk of almonds was then mixed with the rice and boiled, after which the brawn was added to it, and thickened with it. When it was stiff enough, sugar and almonds were added, and it was fried in lard, and served. This is not the *blanc-mange* of our day, but rather a curry with the curry powder omitted.

Why Autopsies?*

J. Dechard Guess, B.S., M.D., Greenville, South Carolina

MAY I EXTEND my word of welcome to the undertakers who are with us tonight in joint meeting? It is a joy to have you here, just as it is a relief and a comfort to have you join us in the home into which death and sorrow have come. Many is the time that I have anxiously awaited your arrival and have felt a burden lifted from my heart, as some one of you came and with sympathetic skill and comforting efficiency took over the situation. And it is not only in death that our services come together.

The word *mortician* comes from the Latin *mors* (*mortis*), which means death +*ician*, a Latin suffix denoting a practitioner in a specified field, as a musician, a technician, an optician, a mathematician. So, as we, by calling ourselves *physicians*, lay claim to qualifications for meeting the bodily needs of the living; you, by calling yourselves *morticians*, lay claim to qualifications for meeting the bodily needs of the dead. Certain it is that we medical men who are true to our profession do not consider that our task is done when we have pronounced our patient dead, and certain it is that your ministrations in these dark hours are means of comfort to the living through considerate care of the dead. We, too, recognize and discharge the duty of extending comfort and consolation to those who mourn, and so your task and ours becomes a common one.

Rules and regulations governing the burial of the dead extend back to the dawn of recorded history, about 5000 years before Christ. These at first were aimed at the protection of the living against pestilences and discomforts and at preservation of the body intact for its resurrection. In the early and middle Christian eras the idea of the sacredness of the human body came into being. It came to be looked upon as the temple of the human soul and a part of the Father God, and hence it must not be violated.

Although this idea was a distinct advance in religious thought, it was not one which helped advance medical knowledge.

In the earliest days of medicine the importance of dissection of the human body as a source of medical knowledge was recognized by leaders of those practicing the healing art. Susruta, (*Circa* 500 B. C.) advocated in his writings such dissection as was deemed indispensable for the making of a competent surgeon. Celsus, in the first century A. D., wrote that it was necessary for the student of medicine to see corpses. Coiter (*Circa* 1534 A. D.) was successfully insistent with the civil authorities on the need of autopsies in the study of disease; and Schenck at about the same period ardently upheld the value of necropsy in the advancement of medical knowledge. In 1669, the Italian republic of Lucca, which was suffering a scourge of tuberculosis, made postmortem examination of those who died from that disease obligatory.

Many of the anatomical and pathological errors and misconceptions of the earlier physicians, especially those who were philosophers and therapists, seem to the most ignorant modern medical man as ludicrous and almost indefensible and yet many of these early physicians who have come down to us in history were intellectual giants, not only of their day, but of any day. But there was so much that is true of human anatomy and pathology which could not be learned either from philosophical thinking or from animal dissection or experimentation. And what was true of that earlier day is equally true today.

From time immemorial the physician has had two chief sources of medical learning, which have had to be carefully correlated. The first is clinical and consists of a carefully recorded history of the patient's symptoms from the beginning of his ill health to his death, together with a carefully tabulated record of the development of successive objective signs; and the second consists of the autopsy findings. That is to say a study of the history, his physical examinations, the progress notes of the illness and the necropsy findings make up the foundation of thinking, the basis of recognizing new or rare diseases, of adjudging the effects of treatment—and that is just as true today as it ever was, and since it is true every medical student is given a great deal of training in history-taking, physical examinations, the recording of progress notes and, insofar as is possible, in the viewing of autopsies. The word autopsy means to see for one's self—the most important means of learning.

Karl Rokitansky (1804-1878), of Vienna, one of the greatest of gross descriptive pathologists, wrote: "Pathological anatomy has been presented by me to my students as the essential basis of pathological physiology and the elementary doctrine of medical research. On pathological anatomy, clinical knowledge is founded, developed and perfected. It has been further developed by pathological histology, has shown the way to chemical

*An address delivered at a joint meeting of the Greenville County (S. C.) Medical Society and a group of Greenville County Morticians, July 6th, 1942.

pathology and has called experimental pathology into being."

The medical novice, the tyro, gets his anatomical basic instruction in the dissecting room. He is seeking knowledge of the normal as a basis upon which to build a knowledge of the abnormal. Later he goes to the autopsy room and sees for himself diseased structures and tissues. In the pathologico-clinical conference he collaborates history, physical examination findings and progress notes with what he saw at autopsy—and that training and discipline is necessary to make him "a good *young* doctor". Much that he sees and studies is more or less commonplace to the more experienced physician—and yet what a host of surprises even the most experienced physician gets; how many of his diagnoses are proven false and his treatments shown to be faulty by the run-of-the-day autopsies in the teaching hospital! At best only from forty to sixty per cent of diagnoses are in the main correct, and very few are wholly inclusively and exclusively correct.

For the experienced and skillful physician, if he is to remain experienced and skillful, it is highly necessary that he check his thinking and his deductions in the autopsy room, that he have opportunity to solve his perplexing cases by seeing for himself. No man, no hospital staff, no physician group ever has or ever will make and keep high standards of skill in diagnosis and treatment, maintain a courageous demand for all the truth of all their cases, and avoid the pitfalls of intellectual arrogance and self laudation, if he or they neglect any one of the triad—careful history-taking, close clinical observation and frequent study of their failures at autopsy.

Acute appendicitis was not recognized, understood or named before Jean Fernel in 1497 wrote a book on pathology describing what he had seen at postmortem examination. Then "iliac passion", or deadly cramp colic became appendicitis.

Heart valvular disease was recognized by its signs and symptoms, but its anatomical basis was not understood until Raymond de Vieussens about 1650 described what he had seen for himself.

Acute pancreatitis was a clinical mystery until autopsy revealed its anatomical pathology. Tumors of the brain were hidden lesions until autopsy allowed a correlation of symptoms with the morbid anatomy, so that now the neurologist and brain surgeon can minutely and accurately localize them before their operative removal is begun, and so make their successful removal possible.

Modern civilized man does not expect the resurrection of the human body that lies a corpse. The more intelligent do not see in dissection of that body an irreligious onslaught upon the sanctity of God's masterpiece; and where patience and tact are used usually the family of the dead can be brought to see that an exploratory incision after death is no more a desecration of the body than is an operative incision before death—that is unless someone with greater influence than the one seeking the autopsy either openly opposes it or by his silence seems to do so. It is in this matter that the undertaker can exert so much influence either for or against such investigation. Negro undertakers are generally influential with their race and can help greatly in obtaining autopsy permits; but they are generally either openly hostile, or else, by holding themselves aloof from consideration of the request, exercise just as detrimental an influence. Some of our own undertakers are almost as uncoöperative, and I have wondered why. Is it that competition is so keen with them that they are afraid to exert their influence? Is it that they wish to get immediately ahead with their work and can not brook the delay necessitated by such an examination? Or is it that we doctors are so careless and unskilled in our examination that it makes the embalmer's task more difficult?

Perhaps in some distant day the beautiful and highly skillful work of our embalmers will be on display in museums of the land. There should be no dearth of specimens and every village could have its mummy.

And, perhaps, the need of successful mummification is a greater and more pressing one than is the need for the greater development of medical skill, so that more and more people can for longer and longer periods postpone the eventful day of their own embalming.

Our two professions work together in death, we work together in civic enterprises and we associate together socially. Why can't we work together in an undertaking which, while it brings the morticians no glory, exposes the mistakes and ignorance of doctors and so makes them more skillful, more able to stay the hand of Death—from morticians as well as from others?

And physicians, remember if you would be greater and ever growing in skill and knowledge, the autopsy room alone will not make you so. It will be only like a medical museum, filled with anatomical specimens. There must be careful history recording, complete and carefully-made and -recorded physical examination, comprehensive statement of day-to-day progress; and, if the patient dies, then seeing of one's self at autopsy. And a correlation and thoughtful consideration of all these things will in time make any physician a great doctor.

Individualization In Hernia Repair*

KARL M. LIPPERT, M.D., Lancaster, South Carolina

INGUINAL HERNIORRHAPHY is probably the first operation allotted the young house surgeon. To the anatomist-surgeon, this operation may seem to be a rather simple procedure, but to the neophyte it can be one of the greatest perplexities of all his experience.

The usual technique of herniorrhaphy directs one to first approach the hernia sac along the spermatic cord and then work upward to the neck of the sac. G. Paul LaRoque suggested that the neck of the sac should be approached from within the peritoneal cavity. He practiced inversion of the sac and closure of the aperture without disturbing the inguinal canal.

Combining LaRoque's idea with an anatomic dissection and repair of the inguinal region the following technique has been devised. The skin incision is carried down to the aponeurosis of the external oblique in the usual way. The external surface of the aponeurosis is cleaned of all fat and fascia on the external surface under clear vision of the external inguinal ring. The aponeurosis is then split from the apex of the external ring to the level of the muscular attachments, and the under surface is freed laterally to expose Poupart's ligament in its entire length and medially to the lateral border of the rectus sheath. To this point the technique does not differ from that usually described in the text-books. The internal inguinal ring is now freed from transversalis fascia and peritoneum. At this stage one must determine the next step by the amount of peritoneum made visible by retraction of the edges of the internal abdominal ring. Where there is a large relaxed internal ring, more free surface of the peritoneum can be exposed by dividing the lateral attachment of the internal oblique muscle upward for a distance of two to three centimeters. If one experiences difficulty, he can shift to LaRoque's method and make a gridiron incision to the peritoneum just caudal to the level of the ilioinguinal nerve as it crosses the internal oblique muscle. Through either approach, the peritoneal cavity is entered as in performing an appendectomy.

A small peritoneal incision is enlarged downward until the anterior wall of the hernia sac has been divided. The contents of the sac are returned to the abdomen after careful inspection.

A hemostat is placed on the lateral and medial sides of the divided ring of the peritoneum forming the neck of the hernia sac and a third clamp is fastened to its posterior border. By sharp dissection the hernia sac is then separated from the pelvic peritoneum just distal to the fold formed by traction on these three clamps attached at the neck of the sac. The peritoneal cavity is closed by a purse-string suture of silk. After tying the knot, this suture is passed beneath the internal oblique muscle above the internal abdominal ring and fastened about a small muscle bundle, using care not to include the ilioinguinal nerve. It will be noted that the procedure so far has avoided the spermatic structures and the bladder by always working from above with constant direct vision of the pelvic peritoneum. The anterior wall of the hernia sac is now divided longitudinally in its entire length. A few interrupted sutures are then placed medially and laterally to keep the serous surface of the hernia sac in contact with the under surface of the conjoined tendon and internal oblique muscle when the inguinal canal is reconstructed.

The repair of the inguinal canal from this point depends upon the preference of the operator. Since the peritoneal cavity has been brought above the level of the internal ring by the above procedure, I prefer the Ferguson technique of construction of the inguinal canal. This consists of placing interrupted sutures of silk approximating the internal oblique and a portion of the conjoined tendon to the shelving border of Poupart's ligament, leaving an adequate opening beside the pubic tubercle for the spermatic funiculus. Closure of the aponeurosis of the external oblique, either simply or by imbrication of the medial flap over the lateral, is the usual practice. Whenever the internal oblique muscle is thin or poorly developed a narrow strip of the medial flap of the aponeurosis of the external oblique attached at the pubic tubercle threaded on a fascia needle is used as a continuous reinforcing suture, approximating the internal oblique muscle to the border of Poupart's ligament.

With slight modification to fit the instant case, this mode of approach and the principle of disposition of the hernia sac is also applicable to direct hernia and femoral hernia. It also affords one a better exposure in sliding hernia, particularly with

*Taken from an address to the Piedmont Medical Society's Summer Session, 1942.

regard to the involved portion of the bowel.

The advantages of the approach to the inguinal hernia sac as described in the preceding paragraphs are summarized briefly. It affords direct vision of the contents of the hernia sac and of the anterior pelvic peritoneum. It gives adequate exposure in case an attack on the hernia contents is necessary. It affords means of approach to the pelvic peritoneum and observation of the bladder at a point just above the junction of the hernia sac and the cord structures. It provides a means for higher closure of the peritoneal cavity than is possible by any other method. It is not necessary to disturb nor distort the contents of the spermatic funiculus until after the peritoneal cavity has been closed. The entire procedure can be carried out with a minimum of trauma.

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118 NEW DOCTORS GET LICENSES

The Board of Medical Examiners of North Carolina at its annual meeting in June licensed 118 physicians, 77 by examination and 41 by endorsement of credentials. The 77 graduates licensed by examination will be allowed one year to intern in hospitals before being called for service in the Army or Navy.

The four young physicians who made the highest grades were William Thomas Raby, University of Maryland, 94.9; Vernon Liles Andrews, Columbia University College of Physicians and Surgeons, 94.5; Mary Irene Griffith, University of Tennessee, 93.8; Ruth Leonard, Temple University, 93.1.

Those licensed by examination:

Vernon L. Andrews, Mt. Gilead; Edward R. Bahnson, Winston-Salem; Phil L. Barringer, Hickory; James R. Brandon, High Point; Harry H. Baird, Mars Hill; Earl B. Brown, Washington, D. C.; Van B. Bennett, Burnsville; Howard B. Barnwell, Edneyville; Earl R. Baldwin, Jr., Greensboro; Heath Bumgardner, Stanley; Fred R. Cochrane, Jr., Stanley; Sybil Corbett, Jasper, Fla.; John D. Christian, Rocky Mount.

Clinton Samuel Crissman, Pittsboro; Albert M. Davis, Washington, D. C.; Philip L. Dixon, Jr., Walstonburg; John F. Elliott, Fuquay Springs; Hubert A. Eaton, Winston-Salem; James Sylvester Gilliam, Jr., Eton College; Mary L. Griffith, Ruffin; John B. Graham, Goldsboro; Lofton H. Harris, Siler City; Charles W. Hock, Winston-Salem; Joseph C. Hall, Roseboro; Cecil J. Hawes, Conway, S. C.; Charles Highsmith, Jr., Dunn; Joseph C. Howard, Jr., Roseboro; Howard S. Hussey, Jr., Tarboro; William D. James, Jr., Hamlet; D. H. Jones, Jr., Micro; H. F. Johnson, Macon, Ga.; Robert W. King, Wake Forest.

W. H. Kearney, Washington, D. C.; Joseph W. Kahn, Hayesville; Julian Kassewitz, Fitzgerald Ga.; John Ogden Lafferty, Charlotte; Joseph R. Little, Salisbury; Robert Everette Lee, Washington, D. C.; Julian C. Lentz, Jr., Durham; Hiram L. Large, Jr., Rocky Mount; Ruth Leonard, Lexington; Archibald Graham Martin, 3rd, Suffolk, Va.; Hugh H. McFayden, Morganton; Laurence E. Metcalf, Asheville; Seymour Morse, Wilmington.

French H. McCain, Asheville; William L. Molineux, Winston-Salem; Rutherford D. Neal, Winston-Salem; Leon Oettinger, Jr., Kinston; William Boyd Owen, Canton; Richard L. Oliver, Raleigh; Samuel L. Parker, Pinetops; David L. Pressly, Statesville; Ella L. Payne, Hertford; Joseph F. Patterson, Jr., New Bern; Grover C. Jowell, Jr., Winston-Salem.

George B. Pleasants, Siler City; George B. Patrick, Jr., Wilson; William Thomas Raby, Tarboro; John L. Ranson, Jr., Charlotte; Eleanor Rodwell, Norlina; Logan T. Robertson, Asheville; Barnett M. Rhetta, Jr., Washington; Lee Hyman Sanders, Rocky Mount; William J. Senter, Chalybeate Springs; Tracy N. Spencer, Jr., Concord; Jay L. Smith, Jr., Spencer.

John S. Stone, Leaksville; George J. Thomas, Jr., Winston-Salem; John Y. Templeton, 3rd, Mooresville; Walter M. Watts, Jr., Asheville; Edwin C. Womble, Winston-Salem; John H. E. Woltz, Raleigh; Samuel Wright, Philadelphia; John Francis Weeks, Jr., Elizabeth City; Lillian G. Wheeler, Washington, D .C.; William T. Yates, Washington, D. C.

The following received North Carolina licenses by reciprocity:

Gladstone W. Allen, George K. Anderson, George L. Crane, Catherine Creighton Carr, Clarence Daniel Davis, Atala Thayer Schudder Davidson, John Edward Ford, Keith S. Grimson, Davis Watson Goddard, B. L. Holladay, James M. Hanks, John Jacobs Hannibal, Jr., Charles Noel Hall, Gladys Morgan Happer, James E. Hemphill, Grange Germania Jones, Edward J. Johnson, R. R. Jones, George Michael Kozeruba, Durwood Lee Lovell, J. Frank Manning, R. J. Murphy, Jr., Beryl Imogene Troxell Mason, Robert P. Miller, Alexander Stuart Moffett, William Patrick Nolan, Ray Oscar Noojin, Muriel M. Petioni, Leonard Peal, Edmond Rice, Ruby Arden Smith, LeRoy Lee Sawyer, Jr., LeRoy Russell Swift, Anne H. Thomas, George Richard Thompson, Charles M. Walker, Norton L. Williams, James B. Woods, Jr., Francis Marion Watson, Gerald C. Walker, Ben Webster.

DOCTOR AWARDED DISTINGUISHED SERVICE CROSS SUES DRAFT BOARD HEAD

A suit asking damages of $25,000 from T. W. Mullen, chairman of the Roanoke Rapids Draft Board, has been filed in Warren County Superior Court by Dr. L. H. Justis, prominent Littleton, N. C., physician who was awarded the Distinguished Service Cross in the World War.

Dr. Justis alleges that Mullen charged him and Bat Crawley, Halifax county farmer, of attempting to "frame the Government" when they requested a furlough for Junius Crawley, son of Bat, so that the youth might return from Army service and aid his father in harvesting crops.

"plainly intended" to charge him and Crawley with "scheming to traitorously and perfidiously weaken the armed forces of the country."

The case is set for a hearing here at the September term of court.

Dr. Justis states in the complaint that, as family physician, he was aware of the illness of the elder Crawley and that, on several occasions, he had appeared before Mullen and the draft board to appeal for a furlough for the younger Crawley, so that he might help his father during a short harvesting season.

He charges that on June 8th, when he and Crawley made one of such appearances before Mullen, the draft official said before several witnesses:

"It seems that you (Crawley) and the doctor are trying to frame the Government to keep your son out of the war."

Dr. Justis said the statement, if true, would subject him to an indictment for "'moral turpitude."

CLINIC

Conducted by
FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.,
High Point, N. C.

IN THE APRIL NUMBER of *Southern Medicine & Surgery*, my clinical discussion in a clinicopathological conference held before the North Carolina Neuropsychiatric Society was published. In submitting this for publication I had assumed that the pathological part of the discussion would be published with it. This was not done, for some reason, and I then assumed that it would be published the following month, but to date it has not appeared, so far as I know. I therefore think it only fair to state here that, after reaching my diagnosis of an infiltrating brain tumor, Dr. Paul Kimmelstiel gave a very able pathologic discussion which showed that my diagnosis, beyond all peradventure, was *wrong*, the true diagnosis being a brain *abscess* in about the location where I had indicated a tumor. If it was secondary to any infection elsewhere, such area of infection was not revealed by the necropsy. I still hope that Dr. Kimmelstiel's discussion may be published in full, as it was very illuminating.

THE case for today's clinic is that of a 4-year-old boy who consulted me on Nov. 26th, 1923, complaining of obstructed breathing and restlessness at night, which had been worse for the past few days. His appetite was variable, his sleep restless. Lying down made him dyspneic. He had had influenza 11 months previously, after which he had a little ulcer on his lower eyelid, and the left side of his nose was obstructed. He had lobar pneumonia 7 months before consulting me, at which time his whole right lung was consolidated. At this time the eye and nose seemed to clear up. Another physician saw him and said he had bad tonsils, but advised against tonsillectomy. A few weeks later, this physician called in a laryngologist and together they advised tonsillectomy because they discovered an area in the lung that had not cleared up entirely. Tonsillectomy was not done, however. Since that time the boy's cervical lymph nodes had steadily enlarged, until, one day, I happened to see the boy out on the street, not as his physician, and remarked to my wife, "That looks to me as if ..... might have Hodgkin's disease, or lymphatic leukemia, or something rather awful."

A few days after this, I was called to see the boy's mother, and she asked me to look at the boy's neck. The nodes were much enlarged and quite discrete. The mother asked if it could be tuberculosis of the lymph-nodes. I thought it unlikely. It so happened that at this time the late Dr. Joseph L. Spruill, who later became the first Superintendent of the Guilford County Tuberculosis Sanatorium, was in town as a representative of the State Board of Health, holding a tuberculosis clinic; so I suggested to the mother that she take her boy to him. Dr. Spruill, after a careful examination, said he did not know what the trouble was, but felt sure it was not tuberculosis, and advised that he be brought to me for examination, including a blood count etc. The boy had had some gastrointestinal disturbance at the age of 5 months when his mother was ill and unable to nurse him. He was bottle-fed from this time on. He had had measles at 14 or 15 months. His habits were good. His family history was non-contributory.

He was a pale boy whose cervical nodes stood out so that they could be seen 20 fet away. Apparently all the cervicals and submaxillaries were involved on both sides. They were firm, doughy, discrete and not attached to the skin. The tonsils were very ragged, but smaller than when I was first asked to look at his neck, when they were very large, acutely inflamed and sore, and he had little red ulcers all over his throat. These ulcers had meanwhile disappeared. The chest was negative, as was the abdomen, save for moderate gaseous distention. No hemorrhages were seen anywhere in the skin or mucosae. Spleen was not palpable. Urine negative. Hgb. 41%. R.B.C. 4,140,000(?). W.B.C. 10,160—pmn. 77%, l. 12, m 8, e 3, b. 0.

On Dec. 1st, five days later, a von Pirquet test for tuberculosis was made and proved negative.

On Dec. 7th patient had some diarrhea. His former physician was called in consultation and agreed that the trouble might well be Hodgkin's disease. Because of the seriousness of the condition, the family requested that Dr. J. W. Long be called from Greensboro, and this was done. With Dr. Long and myself were three other physicians—the boy's former physician, a doctor uncle from another town, and Dr. H. B. Hiatt, who was doing most of the röntgenology in High Point at that time. All agreed on the diagnosis of Hodgkin's disease. Dr. Long suggested that I write Dr. Howard Kelly in Baltimore, asking his advice about the relative merits of x-ray and radium therapy. Dr. Kelly not only recommended radium, but made the rather astonishing statement that he believed that they had cured some cases of Hodgkin's disease with radium, so the boy was sent to him. Despite rather hopeful letters from Dr. Kelly's clinic, and a rather prolonged stay there, the boy came home with the shadow of death on him, and died in three weeks. A necropsy was requested but refused. Even a tiny incision to slip out a lymph node for histologic diagnosis was forbidden. Although the Kelly Clinic raised the question of the possibility of tuberculosis and even of simple cervical adenitis, due to infected tonsils (without any suggestion of the advisability of doing a tonsillectomy) the course of the case would seem to indicate pretty clearly that the unanimous opinion of the five physicians who met in consultation before the boy went to Baltimore was correct, and that the boy had Hodgkin's disease.

DEPARTMENTS

HUMAN BEHAVIOUR

James K. Hall, M. D., *Editor*, Richmond, Va.

MENTAL HYGIENE ACTIVITIES

Hygiene and Wholeness

Note.—Contributed by request to the *Virginia Medical Monthly*, for July, 1942.

The ancient Greeks made of some of their highest ideals and of some of their strongest desires goddesses and gods, whom they might worship. Although we have little factual knowledge of Aesculapius, the Greek who is looked upon as the father of medicine, we are encouraged to believe that he had many children and that one of his daughters became famous. She is known as Hygeia, and to the Greeks she exemplified sound personal health and wholesome living. From her name are derived those like words in the English language that relate to individual good health and to those agencies and efforts that maintain health by concern about the personal condition and about the environment. The use of the term hygeia may, therefore, properly have reference to soundness of health in the individual and to all those factors in the individual's environment that may affect the individual's health either favourably or unfavourably.

Although we frequently place the adjective mental before the word hygeia, I doubt if such practice is often justified. In the human being, at least, we think we find qualities or attributes that are worthy of separate consideration, and we often speak of them under the inclusive term mind and by use of the word mental. But I am not certain that we should limit the possession of mind to mortals, or even to members of the animal kingdom. The other day, in examining an ivy vine, slowly and patiently clambering up a brick wall, I fell to wondering how the vine had found out that on one side of it is a brick wall and on the other three sides only space. But the vine must have been told about the wall, for only on the wall side was it putting out the numberless little hands and feet through which is would fasten itself to the wall. The ivy was behaving more adaptably and more intelligently than some other living things that in their egotism limit the possession of mind to those we call animal.

For practical purposes it may be permissible to speak of the mind as those attributes by the use of which the living thing acquires information about the environment and by the use of which it attempts to adjust itself to the environment in such fashion as to enable it to continue to live both individually and racially. It is scarcely possible, therefore, to think of mind as separate and apart from the physical body; and it is equally as difficult to contemplate a mindless mortal. Matter and mind are so intermingled in man that one probably should not even attempt to think of the one singly and apart from the other. It may be no more necessary to think of the mind as the product of the physical body than to conceive of the Milky Way as the result of the Universe.

Yet there can be no objection to the study of any of the qualities or attributes of a person if one realizes that one is dealing with the individual only in part and that such fractional effort can never lead to a full understanding of the person. The ancient Greeks would not delimit their contemplation of man either to body or to mind. They thought of man as a totality—a graceful, beautiful, wholesome, competent combination of matter and of qualities that made possible for their small peninsula for a brief period a type of civilization so marvelous that we wonder if the like of it shall ever be known again.

Emerson was an ancient Greek who lived in Masachusetts a hundred years ago. Man is so wonderful that Emerson was constantly enraptured by contemplation of him, when not disgusted by him. Occasionally I am able to understand something that Emerson said. Though he and Walt Whitman must have differed from each other as the stars differ in glory, each thought and spoke of man in terms of grandeur and of majesty. We need, especially in these distracting and tragic days, to turn to each of them for inspiration and especially for stabilization. Emerson said that all nations were unfolded from the first man; that man is explicable by nothing less than all his history; that there is one mind common to all men: and that every man can understand what has at any time befallen any man. And Emerson was obliged, of course, to define history as the record of man's mind.

Not all the best medical textbooks, hygienic or psychiatric, have been formulated by physicians. Not even the most enthusiastic meeting of a mental hygiene society or of a board of health can change the predetermined decrees of Nature. What are those decrees? Those who would presume to proffer advice and counsel about human health and about man's way of living must find out.

PREVENTION OF POISON OAK AND POISON IVY DERMATITIS

U. S. P. H. S. Bulletin

Sodium perborate can detoxify the active principle of poison ivy in an acetone-aqueous medium.

Here is a new formula in which the sodium perborate will retain its oxygen for several weeks if kept in a closed container, but will liberate it when exposed to perspiration or water.

	Per cent
Cetyl alcohol	35.1
Stearyl alcohol	5.3
Ceresin	3.5
Castor oil	20.8
Mineral oil	21.9
Duponol W A (pure)	1.7
Sodium perborate	10.0
Boric acid	1.7

This ointment will neutralize only as much poison ivy as there is available oxygen on the skin contacted; therefore a thick layer of the ointment is advised. Clothes must be removed after exposure before the ointment is washed off, otherwise the unprotected skin may be exposed to clothes which have been contaminated. Before the clothes are again worn, the contamination must be destroyed. Tools and instruments which have been used in cutting poison ivy must be washed or immersed for 15 to 20 minutes in a 1 per cent solution of calcium hypochlorite.

INSURANCE MEDICINE

For this issue VERNE S. CAVINESS, A.B., M.D., F.A.C.P.
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Medical Director Occidental Life Insurance Company,
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HIGH BLOOD PRESSURE AND LIFE INSURANCE

LIFE INSURANCE COMPANIES face few situations more important than the selection of risks among applicants who present some degree of hypertension. It is well known that hypertensive persons are more in need of insurance than any other class of applicants; yet their life expectancy is so short that only those who present the disease in a mild form are insurable.

Blood pressure control consists of a balance between some pressor substance (probably chiefly adrenalin) and a depressor substance (apparently chiefly sulfocyanate.)[1] [2]

The pressor substance maintains normal tonicity in arteriolar walls whether in health or in hypertension. Hypertension results from an excess of pressor substances in the blood or from a deficiency of depressor substances. We may consider that "deficiency of depressor substance" is a relative term and apply it to mean that there is not ample depressor substance to balance the amount of pressor substance present, whether the pressor substance is present in normal amount, is in excess, or is deficient. It is imbalance that produces hypertension. After hypertension has persisted for a long time arteriolar muscle fibres degenerate and are replaced by fibrous tissue. Later, the fibrous tissue calcifies.

The development of hyptertension is almost always insidious. Only extremely rarely is it acute. The usual picture is a slow, but gradual, rise in pressure. At first, such a rise is not noted; later no importance is attached to it; still later the applicant is surprised to find a higher rating on his policy, or a rejection.

The definition of hypertension is not at all clear in the mind of the average physician or medical examiner. The best standards available, which are the accepted Life Insurance standards, were determined upon by a joint committee of the Association of Life Insurance Medical Directors and of the Actuarial Society of America.[3]

This report calls attention to the fact that any systolic pressure above 128 is high. In reports of personal investigations to appear in an early issue of *The American Journal of the Medical Sciences,* I have suggested that systolic pressures from this level up to 140 should be considered borderline. Of course, any pressure of 141 or above is definitely hypertensive. Diastolic pressures should be two-thirds of the systolic pressure or slightly less and in no case above 86. A pulse pressure less than one-third of the systolic pressure usually suggests arteriolar sclerosis (or spasm) with some degree of myocardial failure.

A normal individual has a stable blood pressure. The reading will show slight variations with change in body position and activity; but for any given body position or amount of exercise, the pressure readings vary little from day to day. Insurance examiners and underwriters have their chief difficulties with the abnormal applicants. Every examiner is familiar with the applicant who shows an unstable pressure. The reading may vary up or down while the pressure is being taken. Even should the pressure return to normal on rest and psychotherapy it will not remain normal and the pressure is likely later to be elevated constantly.

Hypertension is due to an increased cardiac output while pumping against a diminished arteriolar outlet. The picture becomes more complex when one attempts to describe the causes for increased cardiac output or arteriolar spasm and the other causes for diminished arteriolar outlet. However, some hypertensive individuals suffer from functional disturbances: the blood pressure is labile and may vary considerably up or down even while the pressure readings are being taken. These cases are usually seen in young persons, especially those who are unstable emotionally. They are insurable, the rate depending on the individual case and the reports made by the examiner. Other hypertensive individuals have an organic disturbance, the hypertension is relatively fixed, and they are ordinarily not insurable. This group represents a later stage of hypertension when arteriolar spasm has given way to fibrosis and perhaps calcification.

1. Caviness, Verne S., *et al*: The Correlation Between Blood Pressure and the Concentration of Sulfocyanates in the Blood, *North Carolina M. J.* 2: 585-592, November 1941.

2. Caviness, Verne S., *et al.*: Potassium Sulfocyanate in the Treatment of Hypertension, *North Carolina M. J.* 2:283, June 1941.

3. The Actuarial Society of America and The Association of Life Insurance Medical Directors of America: Blood Pressure Study, *Globe Printing Co.*, New York, 1940.

The medical director of an insurance company can not examine all applicants for insurance. He is dependent on his examiners for word pictures of the physical status of the applicants. Each applicant is considered individually on a basis of available information. Many applicants have records of having had hyptertension in the past. The examiner can usually get a history of any previous hypertension and should give all the information in his report, including details of treatment.

When an examiner finds an applicant with elevated blood pressure or is able to elicit any previous history of blood pressure disturbances, he needs to be fully alert and on his guard. It may not be easy and may require a lot of tact to get a reliable history, especially if the applicant is taking treatment for hypertension. But the history should be accurate. Many persons who need it have doubtless been denied insurance and probably could have had the insurance if the examiner had given a more accurate picture of the risk. Insurance companies have many sources of information and whenever a medical examination deviates too far from recorded facts of history or physical examination it is only natural that questions should arise as to collusion between physicians, agents and applicants. No examiner can be too careful in recording all findings accurately, and also in getting the history accurately, explaining the meaning of questions when necessary. Hypertension may mean nothing to an applicant, but if he has ever had high blood pressure, he is likely to recognize that term. Adroit questioning regarding previous medical care, what physician was seen last, etc., often is a great aid in obtaining more accurate answers as to impairments.

In making blood pressure readings there are many factors to be considered. The applicant with normal pressure will give no trouble; but for the applicant who is borderline one cannot be too careful. Such applicants are better examined at the office of the medical examiner than at a place of business, though best results may at times be obtained at the home of the applicant. The applicant should be relaxed mentally and physically. Expecting to be interrupted might raise blood pressure in persons with a hypertensive tendency. The applicant needs to be comfortable in all respects. A few minutes time in which to relax often helps. An office or store or warehouse may be uncomfortably hot or cold. Either state would affect the pressure readings. The applicant should be seated in a chair and allowed to lean back in the chair. The arm should rest comfortably on a table, desk, or other surface large enough for the arm to be relaxed. The examiner, of course, will use a standard type of blood pressure apparatus, preferably a mercury manometer with a wide arm band (five inches is the standard width); there is no objection to the use of a spring sphygmomanometer if it is reliably tested for accuracy every two or three months and is not used unless it is accurate. The cuff should be applied directly on the skin, and care exercised to see that it is applied smoothly.

In determining blood pressure, air should be pumped into the cuff steadily and gradually; it should not be pumped up too rapidly nor in jerks. It should not be pumped up unnecessarily high. The cuff should be inflated until the sounds disappear. Then, slowly and gradually, deflate the cuff. The first regular pulse sound should be recorded as the systolic pressure. Sometimes the first sounds are irregular but may become regular as the cuff is deflated; such a finding should be described in detail. It is very important in evaluating a risk. In case the pressure is high, the readings should be repeated several times—care being exercised not to excite the applicant or the pressure will rise instead of falling. Pressure readings should be taken before other examinations are begun to avoid psychic rises in pressure. Deflation of the cuff should progress slowly and gradually. The point at which sounds disappear entirely should be recorded as the diastolic pressure. This is known as the fifth phase. Some medical directors request information regarding the fourth phase; this is the point at which sounds become less distinct and is a few points higher than the fifth phase, or true diastolic pressure. It is well to make notes of any unusual features regarding blood pressure, including any wide divergence between fourth and fifth phases.

Should there be any abnormality of pressure readings, it may save the examiner trouble and extra correspondence if he will recheck the blood pressure readings the next day. Also, the examiner should be very careful to report all readings, high as well as normal or low, with explanations, if possible, for variations.

Some companies allow agents to handle medical examination reports; in case there is some information regarding a case that the examiner does not wish to give to the agent, it should be sent directly to the medical director of the company at the home office and be marked "confidential". Such communications are always treated confidentially and at times permit lower ratings for substandard cases. The medical department must have a clear picture of the case in order to give the most favorable consideration. Incomplete information, or anything to suggest that pertinent information is being withheld, necessarily prejudices decisions against an applicant. Coöperation is appreciated by the medical director and it shows that the examiner is interested in his work.

It is the duty of the medical examiner to make a complete, fair and accurate report of all available

findings on any case of hypertension. The medical director is faced with the responsibility of disposing of the case. The fact that an applicant has high blood pressure does not disqualify him for insurance. Many persons with hypertension are as insurable as hypotensives. Hypertensive applicants receive their insurance unless they are too bad; they may have to pay a little more for their insurance than normal indivduals but their rates are based on their life expectancy and are just as fair and equitable as are the rates for normal individuals. All premiums are based on the expected duration of life of the insured individual.

Insurance companies are very much interested in blood pressure. This is necessary since such a high percentage of the deaths among adults in the United States is due, either directly or indirectly, to hypertension. No medical director expects an examiner to forecast the probable duration of life of any applicant who has hypertension, but a fair and accurate picture of the condition of the applicant is expected.

The applicants with some hypertension who are most likely to obtain insurance are those who are examined by a physician who has a reputation for accuracy in his work, who makes a fair appraisal of each case and never attempts " to put something over" on the insurance company.

UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

TREATMENT OF STONES IN THE UPPER URETER[1]

THE PROBLEM of treating a patient suffering with ureteral colic demands complete individualization in each case. However, certain broad divisions or plans of treatment have become well crystallized by the experiences of urologists. Calculi in the upper ureter—from ureteropelvic junction to the iliac vessels—demand different handling than those lower down.

A stone in the upper ureter should not be interfered with if it is of such size that it will pass spontaneously to the lower ureteral segment or that it will pass out of the ureter with no manipulation. Surgical removal is in order if the stone is at the limit of doubtful passing or will not pass. Stones up to 1 cm. in size are considered to be within the limits of spontaneous passage.

These important points and some others to be dealt with are emphasized in a recent contribution[1] by the Lahey Clinic.

Stones in the lower ureteral segment can for the most part be manipulated (under spinal anesthesia) with reasonably successful removal. Unsuccessful manipulation may demand surgical removal because of pain or fever. Large stones may reach the lower ureteral segment without any possibility of spontaneous passage or instrumental removal, and these cases are rather obvious. There is no quarrel as to their final disposition, although treatment in the two ureteral divisions under certain conditions may overlap. A patient who has previously passed a calculus will deliver larger stones with less discomfort than a patient undergoing his first ureteral colic. The repeater may violate all urologic dicta and further complicate an already complicated subject.

Instrumentation of stones by experts in their field consists of short trials, under perfect relaxation by spinal anesthesia, strict aseptic technic in hospital, followed by close contact between the patient and physician to prevent more complications. Disaster may intervene otherwise.

Large concretions in the upper ureteral segment can frequently be localized with the aid of excretion by complete obstruction or temporary suspension of kidney function. Any stone in the ureter may produce anuria, and this usually calls for prompt surgical intervention. The removal of the stone promptly relieves the anuria.

A careful preöperative examination should include pyelograms and ureterograms, and immediately before operation a ureteral catheter should be passed up to the stone and x-ray picture made, and the ureteral catheter left indwelling until after the operation.

Lumbar Ureterolithotomy—A muscle-splitting type of incision is used. The external and internal oblique muscles are split in the course of their fibers, identifying each layer so that the muscles be not injured. Full exposure can be gained with this limited incision. The tendinous end of the transversalis muscle is split and the retroperitoneal space entered. The ureter lying along the posterior leaf of Gerota's fascia for a considerable distance is easily accessible. No important nerve or vessel is encountered and, since the procedure is based on anatomical dissection, there is little trauma and shock.

Postoperative Course—The reaction is mild and the patient may be up and go home much earlier than after other types of renal surgery. When considerable infection is present, or when the kidney has suffered greatly from obstruction plus infection, a small catheter is inserted up the ureter with its tip in the kidney pelvis for drainage. A closed drainage system is connected up with this catheter after operation, and 0.8 per cent sulfanilamide solution is used as an irrigating fluid. When a frankly purulent urine was found in one patient,

1. Ewert, Earl L., *Surgical Clinics of North America*, June 1942, Lahey Clinic Number.

this procedure saved the kidney and finally sterile urine was obtained.

In our experience, patients with stones in the upper ureteral segment convalesce more rapidly, have a shorter hospital stay than do patients having had a simple pyelotomy for stone, which latter may be a trying procedure. Full exposure with the muscle-cutting incision is necessary.

SUMMARY

The upper ureteral segment can so easily be exposed and a stone removed from it with a muscle-splitting incision that this point should be emphasized.

Manipulation of upper ureteral stone is for the most part contraindicated. Stones of such size that they seem to be doubtful of passing spontaneously are best handled by lumbar ureterotomy and in the presence of infection this point should be reëmphasized. The short hospital stay and the economic saving thereby must not be overlooked.

HISTORIC MEDICINE

THE FOLK-LORE OF THE ACUTE EXANTHEMATA[1]

IT IS NOW GENERALLY AGREED that the eruptive fevers cannot be traced further back than the Middle Ages. There do not seem to be any popular causes suggested for their occurrence, such as catching cold, sexual excess, or punishment for an evil life, as are suggested for pulmonary tuberculosis, skin diseases and venereal diseases. Except smallpox none of the exanthemata has been attributed to malignant spirits or demons. In comparison with curative measures and in accordance with medical folk-lore generally, prophylaxis is rarely employed in the acute eruptive fevers. There are several examples of the same treatment being applied to this group of diseases generally, such as overheating the patient and flagellation with nettles to bring out the rash. There is a tendency to regard them as trivial, a belief responsible for much infant mortality, and the view that they do not occur more than once in a patient's lifetime.

Although smallpox did not exist in classical antiquity, it is by far the older of the acute exanthemata, having been known from time immemorial in India. Central Asia was also an ancient focus of the disease, as well as China. To smallpox alone of the acute exanthemata has a divine origin been assigned, although a few patron saints have been invoked in the case of measles. Closely associated with the supposed existence of a divine being causing smallpox is the avoidance of calling the goddess or disease by proper names and substituting more or less euphemistic terms.

Among the Gayos of Sumatra the name of smallpox may not be used in the house of a man suffering from it, and the words characteristic of the disease such as "ugly", "red", "stinking" &c., are also forbidden, the title of "prince of the averters of misfortune" being substituted. A similar prohibition to mention the disease by its name is to be found in Bulgaria. When a case occurs in a household a loaf of bread or pastry is made, spread with honey and given to the neighbours with the recommendation to eat it "for the health of the sweet and honeyed disease".

The euphemistic modern Greek term for smallpox means kindly inflammation or blessing.

Lady Mary Wortley Montagu's letter to a friend in 1717 shows that inoculation was a folk-lore practice carried out by old women in Turkey long before it was adopted by medical profession in England and France. The combination of vaccination with folk-lore methods is illustrated in India where the former is accompanied by worship of the smallpox goddess, and in Morocco where the vaccinator, if the operation is to be successful, must have killed an enemy in battle.

In Balkan countries where vaccination is regarded as the work of the devil modes of protection employed by the people include heavy smoking, keping grass snakes and swallows' nests and chewing bilberries or garlic.

Hastening the appearance of the eruption by warm coverings and warming pans, administration of warm tea and brandy, and decoctions of lentils or cynoglossum, were favourite devices. The use of red hangings and bedclothes to prevent pitting in smallpox was used in Japan in the tenth century A.D., long before John of Gaddesden, who is usually credited with being the first to employ this method. Animal cures consisted in roast mice, blood of pigs, pigeons and snails, and faeces of cats, cows and sheep. Other remedies were burying the patient up to the neck, a method frequently employed in Gloucestershire; stealing a bun from the shop of a person whose wife when she married did not change her name, and giving it to the patient to eat, a practice current in Cheshire; and washing the patient at the grave of a murdered man and taking him home by a different way from that by which he came.

Owing to its more serious character more patron saints are connected with smallpox than with any of the other acute exanthemata. St. Bonose is invoked because his form of martyrdom consisted in having his flesh torn by iron hooks which produced scars resemblirng those left by small-pox. St. Nicaise had the smallpox.

Measles has more popular errors connected with it than any other of the acute exanthemata, viz.,

1. J. D. Rolleston, in *Proc. Royal Soc. of Med.*, (Eng.), June

1) Measles is often considered as a trivial disease, whereas its severity and fatality rank very high among the acute diseases of children. 2) It is believed that measles clears out the system and makes a child less liable to contract other diseases. 3) The old heating regimen still survives in the popular belief that children suffering from measles should not be washed or their body linen changed for the first week of the disease.

Coprotherapy is frequently employed in measles for bringing out the rash, especially sheep's dung which is called "nanny-goat tea", or "nanny pill tea".

Plants which have been recommended for bringing out the rash include rosemary, elderberry or marigold leaves, flowers of the elder.

Curative properties have been attributed to stones, especially those with a hole at one end, especially the Long Stone at Minchenhampton (Glos.) where children are passed through its hole to cure them of measles and other diseases. In China pearls with honeysuckle are held to be useful against eye complications. In the seventeenth century bezoar stone had high repute against measles, smallpox, pestilence and malignant fevers. The disease had a certain number of saints of its own.

A hundred years before it received its present name in the middle of the seventeenth century, scarlet fever was popularly known as rossania, rossalia, sofersa, sturola, scurula and rosagia. A popular error was that a mild case of scarlet fever was capable of transmitting only a mild attack to another person.

In certain parts of England and Ireland some of the patient's hair is cut off and passed down the throat of an ass who is thereby supposed to receive the infection. A reputed cure for scarlet fever in Cornwall is to drive sheep through the house containing the patient in the belief that they will take the fever with them.

In Hampshire a camphor bag worn round the neck is regarded as effective in the prevention of scarlet fever and measles. An amulet containing sulphur has also been used in Scotland.

For fear of the rash striking inwards the patient is made to sweat profusely by hard cider, decoctions of rue accompanied by milk and honey and "nanny-goat tea". A popular remedy for scarlet fever in Ireland is the application of the blood of a hare by means of rags which are afterwards burnt. In Belgium mullein flowers mixed with an egg and olive oil and a spoonful of holy water were made up into a poultice and then thrown over the shoulder without looking back.

The modern Greek for chicken-pox is a derivative of a word which means blessing. The term chicken-pox was first used in medical literature by Richard Morton, who in 1694 speaks of a form of smallpox "called in the vernacular the Chick-pox". Under the name of "crystalli", which was obviously chicken-pox. Guido Guidi, physician to Francois I, stated that the vulgar called it ravaglione. Another example of folk-lore anticipating scientific medicine is furnished by the fact recently mentioned by W.. N. Pickles that the connection between herpes zoster and chicken-pox had been known among the people in Aysgarth in Yorkshire long before this connection was demonstrated by Bokay in 1892.

Among the Czechs dry plums are applied to the eruption and St. Barbara is invoked. In Belgium the eruption is powdered with potato meal and starch.

TUBERCULOSIS

J. Donnelly, M. D., *Editor*, Charlotte, N. C.

GETTING THE TUBERCULOUS PATIENT SO HE CAN MAKE A LIVING AFTER ARREST OF HIS DISEASE

The return of the patient to his place in productive activity is the final objective of treat-treatment of his disease. The fact that 50 per cent of sanatorium patients still die from their disease within five years after discharge indicates that this problem requires further study. The original purpose of the sanatorium was the segregation of patients suffering from a disease dangerous to all contacts. A sufficient number of cases were arrested to stimulate the idea of the development of the sanatorium for care of the minimal case with a good prospect of cure. The minimal case was infrequently seen, and prolonged bed rest was found necessary for the majority of the patients, even after the advent of collapse therapy; and this prolonged inactivity undermines the stamina of many patients, so that they lose all desire to undertake any economic effort and become human parasites to live indefinitely on the earnings of members of their families, or on funds provided by charity or taxation.

Occupational therapy was gradually introduced into sanatorium treatment in order to relieve the tedium of enforced inactivity, and later for the purpose of preparing each patient to be at least partially self-supporting after his discharge.

In the July issue of *Diseases of the Chest* Dr. John W. Unis, of Firland Sanatorium, discusses the rehabilitation of the tuberculous. He designates Educational and Occupational Therapy a social treatment of tuberculosis, with definitions as follows: (1) Educational Therapy is an effort to teach the patient to understand his illness and its cause; to influence in the right direction his attitude toward himself, his mental and physical pro-

cesses and his environment; (2) Occupational Therapy is a method of treating the sick or injured by means of instruction and employment in productive occupation.

The first is regarded as one of the most important aids in the treatment of tuberculosis, recovery and future after recovery depending much on the program of activity which he adopts in the beginning of his treatment. The proper mental attitude is essential, and mental attitudes may be altered by the proper direction.

The fear of permanent invalidism or death, worries over leaving family, loss of earning power, and, finally, of rehabilitation after recovery from his disease, weigh on the patient's mind. The author contends that every sanatorium must become a training and teaching center, in the beginning of treatment explaining in lectures to the patients the cause and development of the disease, and the rationale of its treatment. Physical examinations should be given often and explained to the patient in detail, reassuring of the good chance for recovery if the rules of recovery are carefully followed. Some patients need a firm hand, while others need more gentle sympathy. Following the improved morale brought about by means of educational therapy, occupational therapy should be gradually added to the routine. Many patients will be physically unable to resume their previous occupations, and, hence, will have to undertake work which, without some previous occupational instruction, they will be unable to handle.

Patients who have passed the first three months on bed rest satisfactorily are allowed to begin sitting up in bed for 15 minutes, increased 5 minutes per day until one hour is reached, provided symptoms remain good. They are then allowed the reclining chair in the open, and the time-up is increased 10 minutes per day until 2 hours is reached. Bathroom privileges and permission to walk to and from the reclining chair are then added. When this time-up and exercise has been increased to 6 hours up clothes are given and assignment to easy hospital jobs—pushing tray wagons and food carts, scraping dishes etc. If there is improvement under this exercise the work is increased. When one reaches the 8-hour up schedule he is given a work-sheet on which he is to note every hour of work, recreation and rest, calculating all activity in hour-miles. It has been found that walking on the level at the rate of 2 miles per hour is the best upper limit of exercise. Every 2 weeks the physicians have a work-sheet conference with all patients having eight or more hours up. Hence, a patient's response to prescribed exercise is under close supervision. The author gives a specimen work-sheet for an imaginary patient as follows: Occupational Therapy Department, 2 hours; a hospital job, ½ hour; recreation, 2 hours; walking, ½ hour; necessary activity such as walking to and from meals, eating, making beds, taking baths, examinations, etc., 3 hours; one remaining hour for chair rest—a total of 9 hours up and 15 hours in bed.

After this limit of time-up is reached a patient may apply to the occupational therapy shops. The author has found most gratifying the response to the opportunity given him to gain experience in work suited to his physical and educational ability. Courses of instruction in the following subjects are given: printing, mechanical arts, radio, photography, domestic arts, shorthand and typing, barber and beauty culture, arts crafts, gardening, library work, college and high-school courses and clerical work. Pay positions are offered, such as heads of various departments, janitor work, store-keeper and similar jobs. Incidentally, no patient is allowed a town leave until he has 8 hours up-time and is holding one of the sanatorium jobs which consist of work usually done by orderlies.

The author concludes that "it is difficult to separate the medical and social treatment in tuberculosis because the effectiveness of any social measure is usually limited by the physical condition of the patient". The medical treatment has far outstripped its equally significant social aspect. In no other disease is the recognition of the social character more necessary than in tuberculosis.

GENERAL PRACTICE

James L. Hamner, M.D., *Editor*, Mannboro, Va.

IMPORTANCE OF ENDOCRINE DIAGNOSIS AND THERAPY

Apparently endocrine diagnosis and therapy are under- or overdone by the great majority of doctors.

A Chicago internist,[1] speaking to a meeting of doctors in Terre Haute, Indiana, presented this important subject so ably that the points he made are passed on in abstract:

In many endocrinopathies a careful history and physical examination plus a therapeutic test will establish the diagnosis. The history in many cases furnishes the most significant data.

A case of virilism, the partially bald woman had a heavy beard and a growth of hair over the entire body, had not menstruated for 18 months. Adenomas of the adrenal cortex, too small to be demonstrated by the x-ray and even difficult of recognition by the surgeon after he has the adrenal in his hand, may be sufficient to cause virilism, so

1. J. H. Hutton, Chicago, in *Jl. Indiana State Med. Asso.*, May

in many cases these adenomas cannot be recognized preoperatively.

Often the story of pituitary insufficiency is that the onset followed pregnancy, an infection or some surgical procedure, especially opening the abdomen under ether anesthesia. If she had babies she probably could not nurse them. Or she may have nursed the first one for a few months during which time she took on weight, suffered from headaches, fatigue and obesity.

A patient with the typical delicate osseous system of hypopituitarism, B.M.R. minus 25%, sugar curve during the glucose tolerance test was 81, 114, 90 and 50 mg. Injection of 0.5 c.c. of anterior-lobe extract relieved the headache within one hour and complete relief of symptoms was obtained by three injections per week.

A woman who has a headache just prior to, during, or within 48 hours after her menstrual periods usually owes her trouble to pituitary deficiency. Some victims of hypopituitarism become chilly and experience a craving for sweets about the menstrual time. If she experiences abdominal pain, nausea, vomiting and depression at the periods her trouble is probably ovarian insufficiency.

The victim of thyroid deficiency is sensitive to cold, enjoys hot weather and usually perspires but little. The victim of adrenal insufficiency is sensitive to cold but is also adversely affected by hot weather. Hypothyroidism often causes mental retardation, loss of memory and paraethesias. Gastro-intestinal symptoms range from constipation to those of ulcer. In patients suspected of ulcer, hypothyroidism should be ruled out before making an extensive gastrointestinal study. With correct doses of thyroid bowels are regular; if an insufficient dose is given, constipation persists.

Obese patients who complain of diurnal somnolence are usually victims of pituitary and thyroid deficiency. In hypothyroidism the skin is dry and rough, the hair brittle. The teeth, if the condition arose in early years, are slow in erupting, irregularly placed and of poor quality. In pituitary deficiency the skin is soft and easily bruised, hair soft and silky. If height is below average suspect some pituitary deficiency in the early years, which may extend up to now.

Obesity due to pituitary deficiency often comes on rapidly—beginning after pregnancy, an infection or operation. Universal distribution of hypothyroid obesity is generally recognized; that girdle distribution indicates hypopituitarism is just as true.

With but few clinical signs of hypothyroidism, a low B.M.R. is apt to be due to malnutrition or some other nonendocrine disorder, or to pituitary or adrenal insufficiency. Give one to two grains of thyroid per day. If hyperthyroidism is the cause, within 10 days patient feels better. If trouble is due to hypoadrenia, thyroid will cause exacerbation of his symptoms, some heart consciousness and a general increase in his sense of illbeing. If trouble is pituitary deficiency pituitary extracts will in one hour give some relief of symptoms. The administration of thyroid to such patients sometimes aggravates the headache.

Obese victims of pituitary and thyroid insufficiency often have elevation of B.M.R. and yet need thyroid. The therapeutic test again will answer the question. When there are no signs of hyperthyroidism except the increased B.M.R. and a rapid pulse, but a number of physical signs of pituitary and thyroid deficiency, it is well to give small doses of thyroid. Extracts of the anterior and posterior pituitary lobes should also be given two or three times a week. Within 10 days there is likely to be a decrease in the pulse rate and some relief of symptoms.

Uric acid is often increased in pituitary deficiency. The blood sugar curve during the glucose tolerance test is sometimes helpful. A high curve is often found in obese patients. These should not be given extracts of either lobe of the pituitary. A flat curve with sugar below 70 mg. 2½ hrs. after taking glucose is frequent in pituitary insufficiency. This explains the headache and faintness which some people experience an hour or so before meal time.

Every fat youngster with hypoplastic genitalia represents thyroid and pituitary deficiency just as does the classical Fröhlich's syndrome. Other findings are a delicate, easily bruised skin, fine silky hair, tapering, pointed fingers, and genu valgum. Many cases show a lymphocytosis; blood cholesterol and uric acid are often above normal; sugar low. The B.M.R. is elevated in some cases, usually below normal. Absence of creatinuria is significant of hypothyroidism; bone age is less than the chronological age.

Thyroid should be given in gradually increasing doses. Unless blood sugar is high, posterior lobe extracts should be given just short of causing intestinal cramps. Those of normal height or beyond should be given Antuitrin-S, 100 units two or three times a week; the short patients anterior pituitary extract. This, as well as the gonadotropic preparations, may be given in the same syringe and at the same time as the posterior lobe extracts two or three times a week for 90 days; then the injections should be reduced to one every four to five days, and at the end of another two months reduced to once a week. The thyroid should be continued and the youngster should be seen every month or two for two or three years.

Migratory testes call for some gonadotropic compound, 100 units three times a week, for 60 to 90 days; also thyroid. Glycosuria and hypergly-

cemia sometimes occur in the course of such treatment.

Determine whether vaginal bleeding occurs from cancer, fibroid or inflammatory condition. Premenstrual headache, chilliness and a craving for sweets just at the close of the period usually points to the pituitary. Also a prolonged flow at first period, followed by a long period of amenorrhea terminated by another profuse flow.

The treatment of functional uterine bleeding is entirely empiric. Occasionally thyroid and calcium is helpful. In other instances the bleeding may be stopped by daily doses of 5 mg. of progesterone; in other cases by 200 to 500 units of some gonadotropic, or testosterone 25 mg daily. I have found sistomensin, on eor two ampules daily, quite as effective as anything else. Occasionally one will need to use very small doses of x-ray or radium. Some of them can be adequately treated by sound advice and simple sedatives.

All endocrine deficiencies ,except hypogonadism in thin individuals and hypoadrenia, are better treated if tolerance doses of thyroid are added to the specific drugs. Always start with small doses, usually one grain per day, all he can take without discomfort. Few require more than four grains daily.

Some cases of hypertension can be controlled by adequate doses of thyroid .

DERMATOLOGY

For this issue Ray Noojin, M.D., Durham, N. C.

DRUG ERUPTIONS

A variety of cutaneous eruptions may be produced in susceptible persons by absorption and hematogenous spread of a drug or its break-down product following ingestion or injection of the material. The eruption may be due to an idiosyncrasy or it may be due to cumulative effects. The cutaneous eruption may be the only symptom or sign presenting but frequently it is accompanied by mucous membrane lesions and by constitutional symptoms such as fever, headache, nausea, vomiting and diarrhea.

The eruptions may be erythematous, papulosquamous, urticarial, vesicular, herpetic, bullous, pustular, purpuric, keratotic, pigmented, or a generalized exfoliative dermatitis.

The eruption may present itself as a fixed drug eruption or as a generalized eruption. The fixed drug eruption usually occurs in the same area regardless of the time or exposure relationship, and the best examples of a fixed drug eruption are those caused by arsenic, bismuth, phenolphthalein and antipyrine. The generalized eruptions are diffuse and as a rule symmetrical with a predilection for the dependent portions of the body.

The diagnosis of a drug eruption depends on certain obvious criteria which in addition to the general appearance and distribution must improve on withdrawal of the drug with a flare-up or recurrence of the eruption upon reingestion or reinjection of the drug. Repeated questioning with great patience may be necessary to elicit the ingestion of suspected drugs and many apparently innocuous medications may in susceptible individuals be responsible for the most widespread eruption.

No attempt will be made to cover all of the various drugs which have been described as producing drug eruptions but the most common offending drugs will be listed together with the type of eruption that they usually produce.

Erythematous Eruption (maculopapular, morbilliform and scarlatiniform): Antipyrine, belladonna, bismuth, gold and sodium thiosulfate, salicylates, barbiturates, sulfonamides, iodides.

Exfoliative Dermatitis: arsenic, gold and sodium thiosulfate, barbiturates, sulfonamides.

Urticarial Reactions: animal serum, arsenicals, bromides, iodides, barbiturates, phenolphthalein, quinine, salicylates, sulfonamides.

Vesicular Eruptions: antipyrine, arsenic, bromides, gold and sodium thiosulfate, iodides, phenolphthalein, quinine, barbiturates.

Herpetic Eruptions: arsenicals.

Bullous Eruptions: antipyrine, bromides, iodides, salicylates, sulfonamides.

Pustular Eruptions: antipyrine, arsenicals, bromides, iodides, salicylates.

Purpuric Eruptions: antipyrine, animal serum, bromides, iodides, quinine, salicylates, sulfonamides.

Pigmented Eruptions: arsenic, gold and sodium thiosulfate, phenolphthalein, silver preparations.

Treatment is symptomatic except for immediate withdrawal of the offending drug.

OPHTHALMOLOGY

Herbert C. Neblett, M. D., *Editor*, Charlotte, N. C.

SOME DIAGNOSTIC SIGNS OF OPTIC-NERVE AND OPTIC-TRACT LESIONS

Retrobulbar Neuritis: Presents a central or ceco-central scotoma, absolute or relative, and a normal fundus, with decreased vision. No difference between this and optic neuritis except in the latter rapid loss of central vision, edema of disc and retina and retinal exudates.

Differential Diagnosis between Optic Neuritis and Choked Disc: In the latter no early changes

in vision, incomplete macular star. The latter signifies that the initial lesion is improving. Pallor of the disc, filling of the cup, fuzzy margin and perivasculitis signify an old lesion; *i.e.*, either a prechoking of the disc, a retrobulbar neuritis or a neuritis opticus.

Binasal hemianopsia denotes no chiasmal or retrochiasmal lesion but is due to a lesion (pressure) at the disc, to a secondary optic atrophy, to glaucoma, or to a previously choked disc.

General pallor of the optic nerve without loss of substance is due to a chiasmal or to a midfossa lesion. Vision in such a case will remain as found, as a rule, after operation. So explain this to patient and to referring physician.

Structural full discs or pseudoneuritis of the old nomenclature is a normal finding. The vision and fields are normal.

Choked Disc: Fields, concentric constriction and enlargement of the blind spot. Sometimes hemorrhages and exudates at the disc and venous congestion if rapid and recent choking, but not so much or nil in chronic choked disc.

Chiasmal and prechiasmal lesions always show more pronounced field changes in one eye than in the other; *e.g.*, a blind field in one eye and moving objects in the other and optic nerve pallor. These field changes are bizarre and asymmetrical.

A bitemporal hemianopsia is not produced by alcoholism, as has been supposed, but by a pituitary tumor.

Vascular Anomalies: Bitemporal hemianopsia for form and color and more pronounced in one eye than the other is a chiasmal or prechiasmal lesion. With these changes, plus choked disc, there must be a primary or secondary involvement of the 3rd ventricle.

Inflammatory, neoplastic, toxic and vascular lesions affect the maculopapular bundles. It is not for the oculist to say which it is, but where it is, for the benefit of the referring physician.

(a) Given a central scotoma, the lesion is between the globe and the chiasm. This does not tell the type of tumor.

(b) Given a ceco-central scotoma, the lesion is as in (a) above; but neither in (a) nor in (b) do we know whether it is inflammatory, toxic, neoplastic or vascular or what, if in the presence of a normal fundus. If at the chiasm or back of it both fields would be involved. (c) A central scotoma with quadrantic anopsia in one eye is due to a prechiasmal lesion.

Foster Kennedy Syndrome: Retrobulbar neuritis or optic atrophy in the eye on the side of the lesion and choked disc in the other eye.

Grower-Patten Syndrome: Edema of the disc with poor vision in one eye, not improved by refraction, and a central scotoma in the other.

In inflammatory and toxic lesions the history gives a rapid loss of vision, in neoplastic lesions slow loss of vision.

Central scotoma with field changes for form and color in one eye denote a prechiasmal intracranial lesion because of temporal hemianopsia for colors with normal central vision in fellow eye.

Bilateral choked disc and homonymous hemianopsia can mean none other than an occipital lesion. Third ventricle lesions also give a choked disc, not so with 4th ventricle lesion.

Bitemporal hemianopsia for green alone and poor visual acuity both eyes means a chiasmal lesion.

Bitemporal hemianopsia for red and green and poor visual acuity both eyes is a prechiasmal lesion.

Edema of the disc, congestion of the veins and the arteries hidden is due to hypertension and not to tumor. The hidden arteries is the main point in differential diagnosis from choked disc and optic neuritis.

Retrobulbar Neuritis: Not due to any sinus disease unless orbital bone changes are present as result of the sinus disease, but is due to multiple sclerosis, toxic conditions, as from heavy metals, alcohol, nephritis etc.

Treatment: Remove the cause and recovery will ensue in a week or 10 days, anyway, in the acute type. The chronic type will not recover when due to systemic poisoning of long duration.

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Neuro-Ophth.-Rea.

OBSTETRICS

Henry J. Langston, M.D., *Editor*, Danville, Va.

PREVENTION OF MATERNAL BIRTH INJURY[1]

Rapid or forceful delivery will not permit the birth canal to adjust itself quickly enough to avoid trauma. The bladder is supported posteriorly by its attachment to the anterior surface of the cervico-uterine wall. Undue strain exerted at this point by traction, rapid delivery or overdistention of the bladder loosens the attachment; this with the weakening of the vesico-vaginal septum permits the development of a cystocle.

The patient should be catheterized when prepared for delivery since one cannot, by palpation, be positive that the bladder is empty. Even moderate distention may allow a portion of the bladder to descend with the fetal head and be crushed or separated from its uterine attachment. A full

1. M. E. Grier, Omaha, in *Neb. State Med. J.*, Jly.

bladder may be bruised in expressing the placenta with consequent loss of tone favoring postpartum distention and cystitis.

The lower bowel should be emptied by enema when definite labor begins. Impacted feces may interfere with descent and delivery. If 18 hours has elapsed before delivery occurs it is well to repeat the enema. Those given when the head is at the outlet cannot be expelled prior to delivery and serve only to increase the contamination of the field and the discomfort of the operator.

An intact post-partum pelvic floor and perineum will maintain the support necessary to prevent rectocele and uterine prolapse. Support of the perineum during delivery, or episiotomy, will insure the patient against injury to these structures.

Sedatives not only decrease the patient's discomfort but also allow the birth canal in its entirety to accommodate itself to the descending fetus. Sedation should, therefore, be started early to get its full benefit. Many times a rigid cervix will dilate rapidly after sedatives have been given.

Routine post-partum examination reveals that only rarely does a cervix require suture. Gross lacerations should be treated by primary sutures unless the patient's condition or the environment precludes. Minute nicks heal spontaneously or respond readily to cautery at the sixth week.

Manual dilation of the non-effaced cervix always results in injury. A final ridge of cervix may be gently smoothed out to complete the dilatation, but until the cervix is fully open no attempt should be made to deliver the patient.

She should not be allowed to strain and forceps prior to this time will cause injury to the cervix and uterine fascial supports. Incomplete dilatation in breech delivery invariably results in difficulty with the arms and after-coming head. The unyielding cervix may require incision. This is preferable to forcible dilatation since the extent and direction of an incision can be controlled and healing occurs more readily.

Full dilatation is always required for an *atraumatic* forceps delivery. Misdirected traction when the head is in the plan of the outlet frequently will injure the lateral vaginal wall or extend the mucosal portion of the episiotomy.

Episiotomy when indicated should be performed before much blanching of the tissue occurs since subcutaneous overstretching of the muscle may occur without external tear. The medio-lateral incision gives adequate room without danger of extension into the anal canal. Repair proceeds with closure of the mucous membrane by running suture. The upper angle is securely closed and the final suture is place just above the hymen and deep enough to include some of the perineal fascia. The hymen offers a good landmark to insure proper approximation of the tissues at the introitus. Traction on the last suture, in line with the long axis of the incision throws the fascial structures into strong relief and easily permits their repair by interrupted suture. The skin is closed by subcutaneous stitch placed at right angles to the skin edge. The final suture is brought out through the skin at some distance from the incision and anchored by perforated shot. Number 1 chromic is used throughout. The skin closure allows serum to escape from the incision and permits easy cleansing of the perineum. Healing occurs without discomfort. This final step returns to normal the pelvic outlet and, with the others described, leaves the patient free from uncorrected injury to the parturient canal.

THERAPEUTICS

J. F. Nash, M. D., *Editor,* Saint Pauls, N. C.

ON DOING SOMETHING FOR CHRONIC PERENNIAL ASTHMATICS

Our patients with chronic asthma are an unhappy lot and they make us unhappy too. An article[1] which appeals to me to be written by a practical doctor is abstracted.

The chronic perennial asthmatic has frequently recurring attacks of invalidism. Epinephrine does not always relieve the attack; he may become epinephrine-fast, or epinephrine-sensitive. Even when ambulatory he may be cyanotic; he is constantly dyspneic on slight exertion; he has a weak, fast pulse. The condition may afflict children between the ages of six and 12, and some do not begin to suffer until the age of 65 or 70. Such a patient should have a thorough medical examination with allergy in view. The most important fact to be ascertained is the season in which the initial attacks begin.

An analysis of 200 cases of chronic bronchial asthma from 1925 to 1935 shows that: 85 cases begin with mild attacks of winter bronchitis five to 20 years previously; 55 were subsequent to seasonal hayfever and pollen asthma; 50 were manifestations of sensitivity to the miscellaneous antigens.

The onset attack of bronchitis was mild, lasted from one to two weeks and recovery was complete. Attacks grew more severe and longer, later came wheezing. These patients showed positive cutaneous reactions to house dust and to various bacterial proteins, most commonly of pneumococcus, influenza bacillus, staphylococcus and Friedlander bacillus. Bacterial protein can produce two types of reactions, allergy and infection.

1. A., J. A., & B. E. Sterling, Philadelphia, in *Dis. of the Chest,* July.

Repeated allergic shocks are suffered due to bacterial protein, also the mucosa of the respiratory tract undergoes uneven destruction, pockets of infection are formed, mucous plugs obstruct the smaller bronchioles and are not usually completely dislodged, favoring the development of chronic bronchitis and bronchiectasis.

Epinephrine (one to three minims) will clear the chest within a few minutes if there is not a complicating bronchitis; with the bronchitis the feels relieved. Uncomplicated bronchial asthma lungs will be full of rales, even though the patient usually causes little cough or expectoration.

These patients respond well to treatment with injections of three materials—in dilutions of 1:1, 1:10, and 1:100; 1) autogenous vaccine, 2) house dust extract, 3) stock bacterial protein (Parke, Davis and Co.).

To make the autogenous vaccine a smear into culture in beef bouillon is made from each nasal fossa, from each tonsillar fossa, from the postpharyngeal space, and from the sputum. These are sent to a laboratory to be made into a concentrated vaccine (3000 million per c.c.) from the separate cultures. This procedure is feasible and the cost is not great. An autogenous vaccine can be expected to provide satisfactory material for treatment only when the patient shows a positive cutaneous reaction on testing for the organisms present.

House dust extract should be made from the dust of the patient's home or factory environment. Patients with great dust sensitivity are sometimes greatly helped by treatment with "stock-pooled" extracts of house dust, and "stock-pooled" vaccines. Of the 55 in this group, at the onset, five were sensitive to grass pollen; 10 to ragweed pollen; two to plantain pollen; 28 were sensitive to pollen of all seasons (trees, grasses, plantain and ragweed).

All patients who developed perennial bronchial asthma due to one or all of the seasonal pollinations sooner or later lost symptoms of hayfever.

Fifty patients among those studied were found to have sensitivities to two or more of these—cat hair, horse dander, rabbit hair, kapok, orris root, pyrethrum, goat hair, finger-wave lotion. There were no feather cases. There were three mold and many multiple-food sensitivities. A three-day diet containing large quantities of the suspicious food factor will tell physician and patient which of the positive-reacting foods are guilty. Many foods, positive in cutaneous reaction, were only potential factors.

It is important to recognize the prelinical stages of asthmatic bronchitis; 80% could have been prevented.

Complete examination is required, removal of foci of infection, gentle and conservative treatment of the nose and throat.

Allergic testing should exclude all positively reacting factors, and a sufficient course of injections for desensitization be given in cases requiring this treatment.

In the acute phase epinephrine in small repeated doses, except in the epinephrine-fast or -sensitive Aminophyllin (10 to 20 c.c. intravenously once or twice daily) with or without previous venesection (300 to 400 c.c.) or venesection alone, may provide complete relief. In some cases 250 c.c. of saline, with 25% glucose and 10,000 units of thiamin chloride and 150 units of ascorbic acid q. 2 or 3 d. acts well.

Remember possible sensitivity to any drug. Complete trust may be placed in this type of patient when he states that certain medicines and methods of treatment did not agree with him in the past.

A dust-free (or pollen-free) room should be provided, including rubberized coverings for pillows and mattresses. Bronchoscopic drainage is required in a few cases wherein a mechanical obstruction exists. X-ray and diathermy treatment to the chest and the administration of helium-oxygen mixtures are indicated in certain instances.

The single element of greatest importance is breaking contact with the offending protein; otherwise, a course of desensitization. In the early period by daily injections, increasing the dosage drop by drop, desensitization can be accomplished in the course of several months in about 95% of cases. Injections should not be repeated until local reactions from the last injection have completely subsided.

Treatment with vaccines and house dust begins with a weak dilution, gradually and slowly increasing. No matter how many extracts are used, they are given in different syringes and in different sites on the outer arm, so as to be able to judge the specific response to each. The degree of cutaneous reactions is the best guide as to the increase, maintenance or decrease of future injection dosage.

HOSPITALS

R. B. Davis, M.D., *Editor*, Greensboro, N. C.

GOVERNMENT HOSPITALS *versus* COMMUNITY HOSPITALS

Complacency is to a great extent responsible for the chaotic condition of the world today; but it is as true of the human race as of the canine that only the hit hollers. Had only two persons, namely, the President of the United States and the Prime Minister of England, of fifteen years ago,

had vision to look ahead, Hitler would have been stopped at the beginning. The reason their vision was not clear enough was because it was blurred with complacency and things of much less importance occupied their time and thought. If the hospital world of today doesn't take an antitoxin against complacency, it will be revolutionized from A to Izzard and hospitals will be transposed from efficient community projects to inefficient government projects. I wish to go on record as being one man, at least, who sees this danger and is now attempting to forewarn the hospitals and those they serve—*i.e.,* everybody.

As civilization advances and Christianity expands, mankind is inclined to look out for the weaker brethren. This is brought about by a sympathetic feeling and a desire to be a good neighbor, biblically speaking. No other motive will prompt such efficient service. Therefore, it is not difficult to understand that large Government hospitals, many of them built to serve political rather than humanitarian ends, do not render a completely satisfying service to the largest percentage of people coming under their care. This is no reflection upon the men who operate the hospitals. In many instances, I dare say, they are terribly hampered in trying to render efficient service because of some political influence. However, the fact remains that the public at large is now paying for a large number of these Government hospitals and will pay, in the future, an enormous amount of money for other such projects and for maintenance. The lay public looks to the hospital world, and rightfully so, for hospitalization. Since they do put this confidence in the hospital folks of the country, it seems altogether morally right that the hospital people should protect the lay public and satisfy them, so far as hospitalization is concerned. At the present time, however, the hospital people seem to be asleep.

All over the United States and even in other lands where the war activities concern the United States, our country is building thousands of hospitals. From a casual study of the last war and observations made up until the present time in this war, it would not seem unreasonable to say that the Government is making its citizenship compete with itself in the hospital situation. Putting a considerable percentage of our population on the Government payroll, in and out of uniform, does not increase the total population, and compulsory preventive measures and supervision of those in uniform will decrease rather than increase demand for hospital beds. It has been estimated that it takes seven men to keep one soldier at the front. Now if that estimate is anywhere near correct, it would mean that those seven soldiers, leaving civilian life where they were more subject to diseases and illnesses, should require less hospitalization than they did before they became soldiers. The one, however, that is sent to the front is much more likely to be injured or wounded and it is this one out of seven who is the object of special concern.

Unless one actually studies the situation, one cannot grasp the enormous amount of preparation that the Government is now putting forth to take care of this one out of seven. Here in North Carolina there has been spent some $15,000,000 for permanent hospitals for the army. It is well to be prepared but it is somewhat foolish for the man arranging his vacation to spend all of his money on clothes, traveling bags, silk pajamas and the like so that there will be none left to buy his ticket. We might be somewhat misled in our preparations by the experience of other countries in the present war and by our desire to provide best possible hospital care for our men. However, in all kindness we can state that the practical answer to the problem in front of us is not billions and billions of dollars spent for hospital buildings and equipment.

And we can offer a better plan. The author suggests that the American Hospital Association and all of its allied state projects appoint a committee to meet and discuss this problem, getting the Government's view as well as views from the lay public. It is obvious that far better hospital services could be rendered to the patient for much less money out of the taxpayers' pockets if that service were rendered by the hospitals that are now in operation. To be sure, there are not enough private or community hospitals at present to take care of *all* the needs of our immediate crisis, but those extra beds that are needed could be much more easily provided by giving local hospitals a contract for so many additional bed services over a period of years. This would stimulate the hospitals to remodel and rebuild but the administrative cost would not be a new item, it would simply slightly expand the immediate administrative expenditure. For instance, a hundred-bed hospital in a small community could increase its capacity to two hundred beds with the same business manager, the same superintendent of nurses, and the same heads of various departments. The less expensive personnel, only, would have to be added. The community would feel proud of its new institution and would support and rally around its successful operation. The patients would have more visitors who are interested in them and in their recovery. The doctors would be proud of their institution and would work harder to keep up the records and maintain the highest efficiency in their work. And last, but not least, each patient would receive more individual attention. There is little argument to be made in defense of the services rendered by Government hospitals as compared with that ren-

dered by the smaller community and privately-owned hospitals; therefore, the Government officials should not say that because they build enormous, expensive hospitals and buy for them expensive equipment, the patients receive better service. Also, it is well-known to hospital people that hospitals operated by the Government are much more expensive than the smaller community hospitals. There are many reasons, some of which can be remedied and some of which cannot.

Every hospital in the country, large or small, should besiege the proper Government agencies for contracts to look after some of the present emergency army personnel. About one-half of those needing hospital attention could be taken care of in the existing hospitals, and three-fourths could be taken care of if the proper contracts were let to the existing organizations in the country. This does not mean, however, that combat soldiers, while in the line of duty, could be taken care of in large percentage. This group must be provided for and provided for adequately at any cost; but expensive hospital buildings are not nearly so important as the medical personnel and the proximity of the service to the injured patient. I would rather have my leg set in a barn with strips of bags to hold the splint in place than to ride fifty miles across a battlefield to the expensively equipped operating room for this service. Much less damage would be done and a great deal less suffering if numerous inexpensive hospital buildings were placed near the combat areas, managed by competent executive officers and contract surgeons.

In this day and time, when everyone is so disturbed, it is not wise to write and speak of anything which will promote further confusion. It is not the writer's intent to create a feeling of disloyalty or despair in our citizenship. But it is his hope that those who read may see further than he can see and harmonize better than he can harmonize the great efforts that should be put forward to render better service to the defenders of our democracy and God forbid that any such interpretation should be placed upon this article, but that instead, great good for all may come as a result of such efforts.

PEDIATRICS

Edwin L. Kendig, Jr., M.D., *Editor*, Richmond, Va.

THE KENNY TREATMENT OF INFANTILE PARALYSIS

The treatment of infantile paralysis is certainly not satisfactory, so it is not surprising that the new and radically different Kenny treatment should arouse widespread interest.

Since 1940, Elizabeth Kenny, the Australian nurse who devised the new method, has been in charge of a study being carried on at the Minneapolis General Hospital and the University of Minnesota Hospital.

Miss Kenny believes the cardinal symptoms of infantile paralysis are:[1]

1. Muscle spasm.
2. Incoördination
3. Mental alienation

She believes that:

(1) Muscle spasm is a constant accompaniment of the muscle pain of acute anterior poliomyelitis and may be the sole cause of the pain and that the lesion which causes paralysis may so weaken a muscle that its fibers, by the prolonged spasm, may be converted into a hard, inelastic mass.

(2) Muscle spasm in one group of muscles may so overstretch the opposing group as to cause its paralysis, although it is not directly affected by the disease, and that this paralysis can frequently be cured within a few hours or days if adequate treatment is given to the muscles in spasm.

(3) The severe pain resulting from attempts at motion when muscles are in active spasm may cause a subconscious alienation of the mental processes so that it becomes impossible to use these muscles consciously even months after the spasm has ceased. This must be treated by reëducation designed to establish awareness of the part after release of the spasm.

(4) Pseudoparalysis may be produced by spasms so strong that other muscles are put at a mechanical disadvantage and therefore may appear paralyzed. Release of the spasm in these cases restores function.

Muscle incoördination is the term used to describe the result of the patient's attempts to perform acts with weakened, paralyzed, or painfully spastic muscles, leading to the substitution of other muscle groups so that a mental impulse is diverted to the wrong muscle. By "mental alienation" is meant the destruction or distortion of mental pathways so that a muscle is divorced from voluntary action. This may be prevented to some extent by relief of pain and muscle spasm as quickly as possible.

Miss Kenny states the purpose of her system as as follows:

1. Symptomatic treatment in the acute stage of the disease.

2. Maintenance in full vitality of all tissues of the body, affected and unaffected, somatic and visceral.

3. Reëstablishment of normal nerve-conduction paths and of normal function to the affected parts

1. Cole, W. H., and Knapp, M.E.: *J.A.M.A.* 116:2577, 1941.

to the fullest extent possible.

4. Avoidance of all measures known to interfere with the attainment of these objectives.

5. Prevention of undesirable sequelae and complications.

The technic of the Kenny treatment is essentially detailed muscle reëducation. Obviously, there is no place for the use of splint or plaster fixation.

(The method of treatment will be described in detail next month)

PUBLIC HEALTH

N. Thomas Ennett, M.D., *Editor*, Greenville, N. C.

MILESTONES IN NORTH CAROLINA PUBLIC HEALTH

(Continued from last month)

1924—During this year Dr. Rankin continued his work with the American Public Health Association until November 1st. During this period the work of the Board was directed by Dr. G. M. Cooper, serving as Acting Secretary. On November 1st Dr. Rankin returned, and during that month, under the direction of Dr. Maxey of the United States Public Health Service, a School for Health Officers was conducted under the auspices of the State Board of Health for one week in Raleigh.

Dr. M. L. Townsend was placed in charge of the Division of Health Education. Dr. K. P. B. Bonner resigned as director of the Bureau of Maternity and Infancy.

1925—Dr. Rankin resigned, effective June 1st, to accept the position of director of the Hospital and Orphan Division of the Duke Foundation. At a meeting of the Board of Health on May 30th Dr. G. M. Cooper was unanimously made Acting Secretary for an indefinite period of time to succeed Dr. Rankin. During the year Dr. E. F. Long resigned as Director of County Health Work and Dr. C. N. Sisk, who had been assistant to Dr. Long, was placed in charge of county health work, without an assistant.

1926—On June 21st Dr. Charles O'H. Laughinghouse, a member of the Board, was elected permanent Secretary and State Health Officer to fill the unexpired term of Dr. Rankin. Dr. Laughinghouse accepted and took office October 1st. Dr. G. M. Cooper, who had for sixteen months administered the work of the Board as Acting State Health Officer, continued with the service and was assigned to the Bureau of Health Education, succeeding Dr. M. L. Townsend, who resigned. On August 6th Dr. Richard H. Lewis died. Dr. Lewis had served as a member of the Board since 1885, and from 1890 to 1909 he served as Secretary of the Board. Since 1909 he had been a member of the Executive Committee. Dr. Lewis held his membership on the Board by appointment from the Governor. To fill the term of Dr. Lewis, expiring in 1931, Governor McLean appointed Dr. John B. Wright, of Raleigh. Among other reasons assigned for this appointment, the Governor stated that it had been the rule since the Board of Health was established to have at least one of the members of the Board a resident of Raleigh.

When Dr. Laughinghouse resigned, in order to accept the election to the position of State Health Officer by his fellow members on the Board, the remaining members of the Board elected Dr. W. S. Rankin, of Charlotte, former Secretary of the Board, to succeed Dr. Laughinghouse.

1927—An important event of this year was the death of Dr. J. Howell Way on September 22nd. Dr. Way had been a member of the Board for a long time. Governor McLean appointed Dr. C. C. Orr, of Asheville, to succeed Dr. Way.

1928—Dr. J. C. Johnson ,who had been director of the Oral Hygiene Division, resigned as director of the oral hygiene work of the Board, effective December 31st.

During this year a corps of nurses employed in the Maternity and Infancy Division of the Board, one-half of whose expenses were paid by the Federal Government from Sheppard-Towner funds, held Midwifery Classes in thirty counties of the state. The nurses gave special instruction to midwives in groups, and the county authorities enacted midwife rules and regulations for the control of their practice.

1929—With aid secured from the International Health Board, the Life Extension Division was added to the activities of the Board this year. Dr. Frederick R. Taylor, of High Point, was made Director of this division. Dr. Taylor carried this work before the medical profession in all sections of the state.

On January 1st Dr. Ernest A. Branch was given the appointment as Director of the Division of Oral Hygiene to succeed Dr. J. C. Johnson, resigned. Dr. Branch immediately set in motion reorganization plans

for the oral hygiene work to include more lectures and more educational demonstration work. Dr. Branch made contacts with several of the colleges of the state and training schools for teachers.

Expenditures for the Board work this year reached the highest peak in the history of the Board, totaling about $486,000.

(To be continued)

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

WHAT TO DO IN A CASE OF SCABIES

SCABIES is an important dermatosis; it is many times overlooked, often improperly diagnosed, and frequently overtreated. Itch is itch the world over, no matter by what name we may designate it. It is no respecter of persons; *it infests the rich and poor*, the young and old, the clean and unclean; hence it is not always to be thought of as a loathesome thing or a disgraceful episode with the unfortunate victims consigned to the doghouse.[1]

The burrows or tunnels are linear, grayish, shallow, thread-like tracts from the smallest fraction of an inch to one-fourth inch, in the superficial layers of the epidermis and produced by the female parasite for the purpose of depositing her ova and feces, after which she dies. The male of the species seems to have one function only, that of reproduction. The primary lesion is a vesicle which early becomes a burrow. All others are secondary, self-inflicted from scratching, papules, punctate excoriations, pustules, boils, abscesses. Burrows are often difficult to find in adults, especially in those who bathe regularly.

Mounds on the shaft of the penis are strong presumptive evidence of scabies, single or multiple —curious, elongated, elevated, dull-red—capable of great edema because of the loose texture of the skin of this organ—early oval, later round.

Intense itching, worse shortly after retiring it usually begins about five o'clock, free of it during the day.

Any itching skin disease is worse in the evening because the patients have more time to scratch; their minds are not preoccupied. The itch mite gets on the job in dead earnest when the body becomes warmed up after retiring. Favorite sites are the interdigital spaces, flexor surfaces of wrists, elbows, anterior axillary folds, mammary glands, abdomen, upper anterior and inner thighs, buttocks, and male genitalia, particularly the penis.

Breast-fed infants frequently present primary or secondary lesions, or both on the face. Older children not infrequently seen with secondary pustules and boils on the palms and soles. Lesions on the mammary glands, primary or secondary, are strong presumptive evidence of scabies.

Always inquire as to whether others of the family have itching skin disease, sleeping with any other member of the family or has slept on the same bed linens. Incubation is from one to two weeks.

Two evils to be avoided—insufficient and improperly applied treatment, and *overtreatment*.

All members of the family who itch or who have slept with the patient must be treated to obtain permanent cure and prevent reinfection.

A general soap and warm water bath and thorough drying of the skin.

Application of the chosen medication from the point of the chin to the ends of the toes, being certain that *not a single square inch* of the skin surface of this entire area is missed.

For infants and young children precipated sulfur ½ dram and zinc oxide powder ½ dram to the ounce of petrolatum, being careful to prescribe sufficient to make six applications for 3 nights and 3 mornings. In older children this prescription can be successfully used in gradually increasing strengths, according to age.

For adults betanaphthol ½ dram, sublimated sulfur 1 dram, and equal parts of Peruvian balsam and petrolatum q. s. ad one ounce, at night for 3 nights only—never more without the advice of a physician. It is rapid in action, very effective, and not apt to produce a dermatitis if used strictly according to directions. Bathe between applications of the ointment.

Alcoholic solutions of balsam of Peru have been satisfactory, 5 to 15% once daily for 3 successive days. This is less messy than ointment, but not sufficiently parasiticidal in some cases.

Benzyl benzoate therapy is highly successful, odorless, does not produce dermatitis or aggravate the existing dermatitis; reinfections are few, only one day of treatment is required and results are excellent.

The rapid, ambulatory treatment is *really* ambulatory, inexpensive, and less than one hour is required to treat the patient. The lotion consists of equal parts of soft soap, isopropyl or 75% alcohol, and benzyl benzoate; 150 grams of the lotion per patient. The patient rubs the body with the soft soap, then soaks in a warm bath for 10 minutes. While still wet, the body is brushed all over with the lotion for five minutes, with a small brush. After a short rest period to permit the body to dry, another 5-minute application of the lotion is brushed on and allowed to dry. This completes the medicinal part of the therapy. A terminal general bath should be given each patient

1. J. W. Bass & W. F. White, Johnstown, in *Penn. Med. J.*, July.

24 hours after last application.

To complete the treatment collect all sheets, pillow cases, towels, wash cloths, handkerchiefs, underclothing, stockings, gloves, shirts, pajamas, nightshirts, blankets, comforters, quilts, trousers, etc. All washable things should be washed, then boiled for 20 to 30 minutes; all other clothing ironed *at least twice* with a *hot* iron.

Each infected and exposed member of the family should be treated the same as the patient. It would be better practice to treat all members of the family even if not infected or exposed.

A dermatitis is sometimes a troublesome sequela, even in those who have been properly treated, and much more prevalent in those who have been overtreated.

In these patients one must be on guard and not make the serious mistake of instituting more treatment for scabies simply because the itching continues, as this will add insult to injury. It is better to try a mild antipruritic, such as 1 to 2% phenol in calamine lotion or a similar ointment, until the cause for the itching has been ascertained, in the meantime reviewing carefully every detail of the applied therapy and questioning the patient at length as to his manner of application, having him rehearse his method of procedure and trying to become acquainted with any slip that he may have made.

SURGERY

Geo. H. Bunch, M. D., *Editor*, Columbia, S. C.

THE TREATMENT OF ACUTE BRAIN INJURY

Disagreement among eminent brain surgeons on the treatment of cerebral trauma suggests imperfect understanding of its underlying pathology and of how best to combat it. Complicating bone injury is important only as it affects the brain. Compound fracture as a gateway for infection, depressed fracture as a cause of pressure, bony fragments that penetrate the dura are common indications for operation.

Treated or untreated, most patients with slight brain injury recover; those with severe injury die. Proper management of the doubtful case is vital, for it may be the determining factor between recovery and death. After acute injury treatment is largely a problem how best to prevent excessive rise of cerebrospinal pressure from edema or hemorrhage. As the highly organized vulnerable brain swells within the rigid cranium a vicious cycle is created which must be relieved if the patient is to survive.

In the early days it was almost a routine to make room for brain expansion after injury in the most obvious way—by making an operative opening in the skull, subtemporal decompression. When it became evident that indiscriminate operation on patients in coma and in shock was followed by a prohibitively high mortality rate, safer and more conservative methods were proposed.

In 1921 intravenous administration of hypertonic stodium chloride solution was begun for dehydration of the tissues and prevention of the development of wet brain. In due time 50% glucose solution superseded this, and since 1935, because it is thought to be safer and more efficient, hypertonic sucrose solution has generally been used as a dehydrating agent.

Although cautioning against excessive dehydration, Fay combines the use of intravenous hypertonic sucrose with sharp limitation of fluid intake and profuse saline catharsis to accomplish the desired degree of dehydration. His mortality is 13.8%.

Munroe, believing that dehydration upsets chemical and physiological cerebral equilibrium, advises in its stead for prevention of increased pressure the withdrawal of cerebrospinal fluid by repeated lumbar punctures.

Dandy advises a normal intake of fluid; he thinks dehydration is harmful, because of the danger of foraminal hernia, the brain stem being forced downward into the foramen magnum when pressure on the cord is suddenly relieved by lumbar puncture. He condemns lumbar puncture not only as a therapeutic but as a diagnostic procedure, he things diagnosis may be made from the clinical findings. With rest in bed, rising intracranial pressure is an indication for subtemporal decompression.

Such wide differences in the management of brain injuries by those who have had greatest opportunities for studying them can not fail to confuse those of us who see only the occasional case. Certain fundamental principles should guide us. Maintenance of physiological rest is essential. Indications for operation should be positive. Definite evidence of acute extradural or subdural hemorrhage as are compound or depressed fractures of the skull are positive indications. Dehydration should not be excessive. Enough fluid should be given to provide for the elimination of waste and for the maintenance of physiological function. Lumbar puncture carefully done may be used for diagnosis, but not for therapy.

DUODENAL ULCER IN A NEWBORN INFANT

1. E. V. Benbow, Winston-Salem, in *N. C. Med. Jl.*, June

A colored baby, 17 days old, had been vomiting since she began to nurse, and had lost weight—at birth 8 lbs.

The vomiting had no relationship to feedings, was not projectile, contained no blood. No blood had been noticed

in the stools.

Weight one pound less than birth weight, somewhat dehydrated; eyes slightly reddened and swollen, slight purulent discharge in the corners. Vaginal and eye smears negative for the gonococcus. There was no abdominal rigidity, and no abdominal mass could be detected. A few peristaltic waves could be seen over the epigastrium after it was tapped gently with a wet cloth. The diagnosis of non-specific conjunctivitis, pylorospasm or hypertrophic pyloric stenosis, and malnutrition with moderate dehydration was made.

She retained some feedings but vomited most of them. During the first four days in the hospital she lost an additional pound. The abdomen was opened. No thickening of the pylorus was found, no lesion of the intestinal tract. Although the muscle was not thickened, pyloroplasty was performed in the hope of relieving the pylorospasm.

A formula was prescribed by the pediatrician. She received atropine and phenobarbital and several injections of mother's blood intramuscularly. She had normal yellow stools and did not vomit blood, but one month after the operation she weighed 3 lbs. less than at birth. At this time the patient suddenly vomited 2 dr. of dark blood and died shortly afterwards, 35 days after admission and 30 days after operation.

One cm. beyond the pyloric ring on the posterior aspect of the duodenum a circular punched-out ulcer 3 mm. in diameter was found, margins sharp, extending through the entire wall except the serosa.

RHINO-OTO-LARYNGOLOGY

Clay W. Evatt, M. D., *Editor*, Charleston, S. C.

MAGGOTS IN THE MIDDLE EAR

Last September 11th a white man came into the office complaining of recurrent pain and constant discharge from the right ear for seven weeks . On examination the right canal was found full of foul-smelling discharge. After cleaning the canal and removing an aural polyp the size of a small pea, a perforation was seen in the posterior lower quadrant of the drum, through which was seen a glistening white object supposedly another polyp. In a few seconds however this object had moved away. When the light was taken off this object, it would return, only to pass out of sight when the light was again reflected on it. This unusual case of "now you see it, now you don't" had me astounded until the thought of maggots occurred.

Irrigation was of no avail. To kill the invader within the middle ear would be obviously a mistake. To drive him out by eustachian-tube therapy was impracticable. I tried to toll him out by bandaging red meat in the canal, but this method also was unsuccessful.

An orthopedic friend reminded me that in seven (7) days the maggots would come out to pupate, so a plain gauze was worn over the ear constantly. This was changed each night and on the second night what was taken to be parts of two or possibly three maggots were found on the gauze.

The housefly (*Musca domestica*), order Diptera, family Muscidae, lays 120-160 eggs at one laying. Eggs hatch in eight to twelve hours and larvae are full grown in five to seven days. Pupation lasts five to seven days. I do not think these maggots were of the screw-worm fly, since that fly is rare in the section.

After about two weeks my patient's ear cleared up on Sultzberger treatment. The hearing loss was 32%, two months later 29%.

CARDIOLOGY

C. M. Gilmore, M.D., *Editor*, Greensboro, N. C.

RECOGNITION OF THE NORMAL HEART

Many persons are sorely afflicted with heart disease of the mind. In such cases a convincing statement that the heart is not diseased works wonders for the fearful one.

Read carefully the following abstract.[1]

The physician's unhesitating statement to his patient that the heart is in no way diseased, made after careful examination, is much like a court verdict of not guilty in a capital case. In spite of the absence of incriminating symptoms and signs, one may be reluctant to give a positive opinion, for fear that he may have overlooked serious disease.

Indecision of this character is responsible for a vast amount of unhappiness and for "oh-my-heart" persons by the thousands. The patient who has a "weak" or a "strained" heart has it because of mismanagement on the part of some doctor.

Rheumatic fever, chorea and syphilis are responsible for most heart disease. Other infections bear a small and uncertain part. History of the occurrence of rheumatic fever or chorea places the burden of proof on the physician who declares the heart normal. The earlier recognition and earlier and more adequate treatment of syphilis has greatly reduced the number of cases of cardiovascular damage from this disease. Congenital cardiac defects are frequently disclosed by history of cyanosis at birth, a frail childhood, the existence of other developmental defects and the information that a cardiac murmur has persisted since early life. The presence of goiter would promptly bring hyperthyroidism to mind.

Coronary and hypertensive heart disease are suggested when other members of the family have had one or both of these cardiac lesions.

One of the most prominent symptoms of the diseased heart, dyspnea, the physician sometimes accepts as genuine when it is counterfeit. Inquire into the details of the shortness of breath. Patients

1. F. A. Willius, Rochester, Minn., in *Ill. Iowa State Med Soc.*, July

differ greatly in their interpretation of symptoms and share with those not patients in making little attempt at accuracy. "Shortness of breath" at the wrong times and failure to find evidences of cardiac disease enables the physician to render a positive verdict and usually to aid the patient in a prompt and complete recovery.

Consciousness of the heart, tachycardia or arrhythmia, or both, is/are common. When organic causes can not be found and when pathologic arrhythmias are not demonstrable, the physician must deny the existence of heart disease. Complaints of "pain about my heart" are not to be accepted as proof of the existence of coronary disease, even though the diagnosis of the anginal syndrome must be made on purely subjective evidence in a third of the cases. This fact alone neccessitates a detailed account to appraise judiciously and, when possible, of witnessing the discomfort, to observing the effect of the nitrites while the attack of pain is on.

With few exceptions an enlarged heart is a diseased heart. Unless one cultivates the art of percussion he soon loses precision which, says Willius, when highly developed, under average conditions permits him to delineate the cardiac borders within a range of 1.5 cm.

The teleröntgenogram gives the most satisfactory and constant results. The maximal transverse diameter of a normal heart shadow is a bit less than half the transverse internal diameter of the chest. The chunky, short-necked person's high diaphragm reduces the vertical diameter of the chest and causes the heart to lie more transversely. In the tall and thin the heart is more central and appears to hang almost straight. Scrutiny of the borders of the shadow may reveal features indicative of enlargement of certain chambers.

Presystolic and diastolic murmurs are not considered in this paper. A soft, blowing systolic murmur is not transmitted widely and the heart tones are maintained as the intensity of the murmur fades out when the stethoscope is placed beyond the region of greatest intensity. The systolic murmur audible over the first and second left intercostal spaces, frequently is the sole basis for saying a healthy heart is diseased or weak or strained. Venous or arterial bruits in the great vessels of the neck or thyroid arteries, likely to be heard over the front of the upper thorax, make it important to learn the region of origin of a murmur and the path of its propagation. Rather loud, musical murmurs which appear to arise under the stethoscope, of a to-and-fro character, often are mistaken for murmurs of cardiac disease. Frequently examination of the patient in different positions will modify, or even cause the murmur to disappear. Observation of a murmur may disappear during expiration and be much louder during inspiration; this, in the absence of other evidences of cardiac disease, establishes the innocent character of the murmur, and fixes its cause as contact of a portion of the lung with the pericardium, a contact which at times occurs under normal conditions as the lung expands in the course of the respiratory cycle.

The electrocardiograph is helpful in assembling the data necessary to arrive at the opinion that the heart is healthy. But in many instances the electrocardiogram is unaltered and yet serious cardiac disease is present. Never attempt to make a diagnosis from the electrocardiogram alone.

VERTIGO FROM HEAD INJURIES

(J. Y. Malone, Milwaukee, in *Jl A. M. A.*, July 11th)

Knowing the vasodilating effect of prostigmine and believing that in many of these cases the disorder was on the basis of a disturbed vascular physiologic change, I decided to treat a number of suitable cases with this synthetic autonomic drug.

The following objective signs were relied on in evaluating the amount of labyrinthine vertigo present in any particular case: 1) spontaneous nystagmus with the patient's head extended backward, to the right and to the left; 2) nystagmus after quick movements of the head; 3) caloric tests, and 4) ophthalmic examination.

Therapy consisted of 1 c.c. of solution of prostigmine methylsulfate 1:2000 intramuscularly twice weekly and a 15 mg. tablet of prostigmine bromide three times daily by mouth.

Ten cases were treated, all completely relieved.

INTOLERANCE TO DIETHYLSTILBESTROL

Nausea and vomiting have been the most frequent side-effects following administration of Stilbestrol (diethylstilbestrol). A recent report (*J.A.M.A., 119*:400, May 30th) is that there is a definite relation between these symptoms and the nausea and vomiting of early pregnancy. It is well to ask the prospective patient if she had nausea and vomiting with a previous pregnancy, and if so one should take warning to give not over 0.25 mg. daily as an initial dose. Desensitization may be accomplished by giving 0.1 mg. tablets once daily for five days, then increasing the dose gradually until the therapeutic level is reached. Diethylstilbestrol, Lilly (formerly known as Stilbestrol) is available in 0.1 mg. tablets, as well as in larger doses, for oral administration.

SUMMER DIARRHEA IN BABIES

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, is useful in treating most diarrheas, both in bottle-fed and breast-fed infants. For the former, the carbohydrate in the 24-hour formula is for the time replaced with 8 level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casec gradually reduced till omitted entirely. Three to six teaspoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Mead Johnson & Company, Evansville, Indiana, will be glad to send samples on request.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

SOME OBSERVATIONS ON UNDULANT FEVER

UNDULANT FEVER or brucellosis is also known by the following names:

Dust fever
Gibraltar fever
Goat fever
Malta fever
Mediterranean fever
Remittent fever
Rock fever
Subcontinuous fever
Bang's disease.

Undulant fever and brucellosis are the most common terms for this disease.

There are three principal strains of the causative agent, *Brucella*: (a) *abortus,* (b) *melitensis,* and (c) *suis.*

For the past many years we have made an intensive study of undulant fever at this clinic. There are certain features about this that lead us to believe that *this disease is far more prevalent than we have ever even suspected before.*

In the severe form of the disease, with the symptoms typical and the skin and the agglutination tests positive, the diagnosis is easy. Unfortunately, however, a great many cases are atyptical—there is no definitely positive agglutination test and the skin test may be quite negative. These cases must be diagnosed on the history and the clinical findings and by observation of the patient over a period of time. The disease may even exist without fever, which makes the diagnosis of such cases even more difficult.

That this disease is extremely prevalent is beyond question. The cases with symptoms that are not diagnostic will on close study over a course of several days, or even two or three weeks, prove susceptible of reasonably accurate diagnosis of undulant fever, without any positive skin tests.

Treatment affords relief in many of these cases and promptly; but again we have to face certain cases in which treatment is not satisfactory, recovery is extremely slow, and relapses are frequent.

It seems that there are many cases of ill health, a sort of mild invalidism, in which the patient is not exactly sick and not exactly well. These patients are constantly complaining of aches and pains about over the body, especially in the joints and extremities. Neuritic pains are common. A sort of general mild ill health is present and the patient complains of many things, but no one thing to any great extent, so that the symptoms are confusing and a definite diagnosis is difficult to make.

By excluding all other diseases and conditions that are likely to cause such symptoms we can arrive at a clinical diagnosis of brucellosis of subclinical type. In all such cases treatment should be instituted on the basis of a presumptive diagnosis of undulant fever. Treatment should be carried out over a long period of time if necessary to obtain relief. If there is no improvement it would not be advisable to continue the treatment for an extremely prolonged period; but many such cases will experience much relief and make general improvement when we give specific treatment for this disease. Fever therapy, specific vaccine therapy and blood transfusions from immunized donors are all standard methods of treatment. The sulfonamide drugs, in our experience, have not given satisfactory results.

In younger people who are strong and able to stand it fever therapy is a great help. This may be repeated if necessary, but often one treatment will give almost total relief. Fever therapy should be given only by those familiar with it and who know just exactly how to administer it, how to prepare the patient, and where proper equipment and a trained personnel are available. It should not be given patients who are not in good physical condition.

The use of vaccine may be helpful, but is not nearly so promising as the administration of immunized, whole fresh blood, especially from donors who have been immunized against this disease by repeated doses of vaccine until the blood is all of a very high titre.

We have found that younger people immunized against undulant fever yield blood of a high titre, and the administration of this immunized blood to a patient will often give dramatic results, which is especially to be desired in the more severe and the more acute cases. Usually in the slow, subclinical type of cases it is of great help also.

The full coöperation of the patient and the family is necessary in order to treat this disease properly; they must be made to understand from the very start that treatment over a long period of time may be necessary, and that different forms of therapy may be required until a cure or at least relief can be afforded.

We are greatly indebted to Walter M. Simpson of the Kettering Institute, Dayton, Ohio, for much of our knowledge of this disease. In the more severe cases he has advocated the use of immunized, whole fresh blood, and this we have found to be most important in the treatment of this disease. In older persons whose physical condition will not permit fever therapy the use of immunized, whole

fresh blood produces immediate results and gives prompter relief than any other single form of treatment except fever therapy.

The most important fact about this disease, as I see it in this part of the South, is that it must be far more frequent than we have ever thought of before, and these subclinical types of the disease are making invalids out of many people and creating joint and muscle conditions and neuritis and the various other disabling conditions that are incident to the milder forms of the disease.

Naturally, where there is no specific diagnosis available and only a clinical diagnosis can be made, the diagnosis is not easy. However, by careful study of these patients over a period of days or even weeks if necessary, and repeated agglutination tests and skin tests, with a clear and accurate history going back months or even years, we can usually make a very accurate diagnosis. Certainly we can make a diagnosis which is sufficient to warrant our beginning treatment for this disease.

Every obscure condition which is undiagnosed should receive a careful recheck to see if the patient has a subclinical type of undulant fever. A careful study of all such patients is well worth while.

In immunizing donors there is little or no disturbance about this, and one valuable factor is that anyone so immunized will doubtless be immune to the disease from then on—at least, for a long time to come. Our observation has been that immunization of the average individual for the purpose of providing an immune donor does not cause that individual any disturbance, and the added safety factor in that the individual is immune to the disease for a period of indefinite length, thereafter should be explained at the time. Most people will appreciate the fact that they are immune to a disagreeable and disabling disease, prone to hang on.

The use of blood plasma from immune individuals may be of considerable help, but in our experience over a period of years whole immune blood is far superior.

WHAT TO DO AGAINST WAR GASAS

The following information on war gases is supplied for general publication because of the possibility that they may at some time be used by the enemy. If people will remember a few simple facts, they will have no unreasonable fear of this agent.

I. War gases stay close to the ground, for they are heavier than air. To get out of a gassed area, simply walk against the wind or *go upstairs*.

II. Gas is irritating and annoying to the eyes, nose, lungs, or to the skin, but it is usually harmless if you do not become panicky but promptly leave the gas area and cleanse yourself. A soldier must put on a mask where it is necessary to remain in the contaminated area, but a civilian can go up on the second or third floor and literally ignore it if the windows are kept closed.

III. If the gas should get on your skin, you can prevent it from doing much harm by sponging it off as quickly as possible with a piece of clothing, such as a handkerchief, and applying some neutralizing substance, followed by a thorough bath, preferably a shower, with common laundry soap and water.

IV. If you are indoors, stay there with doors and windows closed, and go up to the second or third story. Stay out of basements. Turn off the air conditioning, and stop up fireplaces and any other large openings.

V. Some gases are spread as oily droplet which blister and burn the skin and eyes. If you are outside when gas is used do not look up. Tear off a piece of clothing or use a handkerchief to blot any drops of liquid from your skin and throw the contaminated cloth away. Blot; do not rub, as rubbing will spread the liquid. Then go home, if it is nearby, or to the nearest place where you can wash immediately with soap and water and cleanse yourself in the following manner:

1. Remove all outer clothing outside the house, since gas can be transmitted to others from contaminated clothing. Put it preferably in a covered garbage pail.

2. Apply one of the following effective household remedies to the part of your skin that has been contaminated; Chlorox or similar household bleach (for mustard); peroxide of hydrogen (for Lewisite); paste or solution of baking soda if you have no peroxide or bleach. If you do not know the gas, use both peroxide and bleach. Keep bleach and peroxide out of the eyes. *Do not waste time looking for these remedies*; bathe immediately if they are not at hand.

3. After entering the house, wash the bleach or peroxide from hands with laundry soap and water and then wash the face. Remove the underclothing, place it in a covered garbage pail, and enter the bathroom.

4. Irrigate the eyes with large amounts of lukewarm 2 percent solution of baking soda (one tablespoonful to a quart of water), or else with plain water. Use an ordinary irrigating douche bag or an eye irrigator. If you do not have these, let plain warm water pour into the eyes from the shower, washing them thoroughly. Do not press or rub the eyes.

5. Lastly, take a shower, using laundry soap and hot water.

6. If the nose and throat feel irritated, wash them out also with baking soda solution.

7. If your chest feels heavy and oppressed, if you have any trouble breathing, or if cigarette smokes becomes distasteful, lie down and stay perfectly still until a doctor sees you.

8. If blisters develop, be careful not to break them and call a doctor.

Remember:

Soldiers require gas masks because they must remain in the contaminated area. Civilians can get out of the gassed area or get above the level of the gas, where they do not need gas masks or protective clothing.

Injured persons, who are gassed, require decontamination before they can be admitted to hospitals. All other civilians can best prevent any serious injury by promptly helping themselves in the manner outlined, using a kitchen or bathroom, laundry soap and water, and a few materials found in every household.

DIABETIC ACIDOSIS observed in two patients was associated with a marked reduction of blood volume due to the loss of plasma volume and a fall in blood volume, with a significant fall in venous pressure. The circulatory collapse sometimes found in diabetic acidosis is in part at least the result of the accompanying decrease in blood volume and venous pressure.—*Jl. Lab. & Clin. Med.*, July.

President's Page

EFFICIENCY IN PRACTICE

For the duration of the war and perhaps for sometime afterward, the relative number of physicians to the total population will be tremendously decreased. It is quite possible for those who remain at home to continue to do perhaps just as good work and at the same time cover the territory. Much professional time is wasted.

There are two things in particular that physicians do to waste time. Both of these could be dispensed with, with no loss of efficiency. In the first place, the physician who practices medicine strictly can see a great many patients in one day and give them satisfactory service. A physician who allows himself to be used as a nurse wastes a lot of time. In the old days when doctors were turned out in tremendous numbers with hopelessly inadequate preparation, there were enough physicians to do a large part of the nursing as well as the practice. Many of the duties performed were simple in character and have now been taken over by a better educated laity. A great many things that had to be improvised can now be purchased cheaply so there is no particular reason why a physician should linger after he has done a strictly medical duty further than to be polite and courteous. Pleasant as these conversations are and satisfying as it may be to the physician to watch at the bedside, certainly during the emergency he is going to be forced to attend strictly to that part of the medical practice for which he is particularly trained.

A second kind of wastage which can be readily corrected with much saving of time to the person who limits his practice and to the great advantage of the patient is to refer his cases that fall into the twilight zone of his specialty. For the ophthalmologist to look into the fundus is all well and good, but when he sees signs of disease elsewhere, he could quickly refer the patient to the proper subdivision and save himself a great deal of time. Since the body is one organism, each part dependent upon the other, it is not possible to divide the human body into parts in order to help the doctors. In other words, by sticking to your business and leaving the other fellow's job alone, except for interest sake perhaps after hours, a great deal of time can be saved.

Aside from the desire on the part of the physicians to serve, there is also a desire for self-preservation. During the emergency should there be an insufficiency of doctors to attend to the ills of the people, the quacks who are not called on for military service on account of their ignorance, will find a great field for exploitation.

In order to get the job done and still have work to do afterwards, each physician will be obliged to confine his work to the practice of medicine, and for those who limit their work to confine it to the limitations of whatever specialty they have voluntarily chosen and trained themselves for.

—George R. Wilkinson.

OUR PROFESSION

By Oliver Wendell Holmes

Written for and read at the meeting of the Massachusetts Medical Society in 1858

As Life's unending column pours
Two marshalled hosts are seen.—
Two armies on the trampled shores
And Death flows black between.

One marches to the drum-beat roll,
The wide-mouthed clarion's bray
And bears upon its crimson scroll
"Our glory is to slay".

One moves in silence by the stream,
With sad, yet watchful eyes,
Calm as the patient planet's gleam,
That walks the clouded skies.

Along its front no sabers shine,
No blood-red pennons wave;
Its banner bears the single line
"Our duty is to save."

Though from the Hero's bleeding breast
Her pulses Freedom drew,
Though the white lilies in her crest
Sprang from that scarlet dew,—

While Valour's haughty champions wait
Till all their scars are shown,
Love walks unchallenged through the gate,
To sit beside the Throne!

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SHOCK—LOSS OF BLOOD—RESUSCITATION

IN THE RECENT annual meeting of the Royal Society of Medicine of England, this important subject was given much attention by the Section on Anesthesia.

The enormous experience gained from treating military and civilian wounded has enabled the British to speak with authority on the proper management of those in shock, those who have lost much blood and those in need of resuscitation—one, two or all three.

A good deal of what was said on this subject represents an advance on orthodox teaching among us; some is quite contradictory of ideas commonly accepted among us; so the discussion of the subject as reported[1] is abstracted *in extenso*:

Primary heart failure may be from sudden stopping of the heart or from ventricular fibrillation—commonly in light anesthesia at some time in induction or soon after the start of the operation. Heart failure due solely to an overdose of anesthetic probably does not occur; three-fourths the dose of ether required to stop the heart stops respiration. Chloroform anesthesia, uncomplicated by operative stimuli, may be taken down to respiratory failure. Optimal conditions for the production of ventricular fibrillation arise with the injection into the ventricle of adrenaline when the heart has stopped.

To combat an established fall in blood presssure, ¼ to ½ gr. ephedrine injected into a vein produces full recovery in one or two minutes; it is better to repeat small doses than to risk cardiac complications by giving an overdose.

Lack of circulating blood is the basic factor in the production of shock; this plus increased permeability of the capillary walls, allowing leakage of plasma into the tissues, this aggravated by anoxia. The normal reaction to fall in b.-p. due to hemorrhage or similar cause is peripheral vasoconstriction which is present in shock; the use, here, of a vasoconstricting drug still further reduces the supply of oxygenated blood to the capillaries.

Cold and fear are important contributory factors. Some investigators failed to produce edema with large saline infusions in normal rabbits until they had been anesthetized with chloroform, ether or chloral hydrate. Restoration of the blood volume will, if the shock is not firmly established, result in vasodilatation and a more efficient circulation. A b.-p. of 90 or less must be raised and the aim is to maintain it at a little over 100.

Hypodermoclysis is useless if fluid is being lost

1. GEOFFREY ORGANE, in *Proc. Royal Soc. of Med.* (Lond.), April

from the blood into the tissues. Intravenous saline, serum or plasma will be necessary, blood where hemorrhage has been severe or anemia existed before operation; in shock with hemoconcentration whole blood is unnecessary, even undesirable. There seems to be no limit to the amount that can be given. The first pint or even more may be run into the vein as fast as possible. The amount should be limited to the estimated amount of blood lost; further fluid required, as indicated by the b.-p. being made up with serum or plasma, or even saline.

The giving of so-called cardiac stimulants to a patient gravely ill from shock or hemorrhage may do harm.

For the gassed patient, with impaired gaseous exchange in the lungs, the oxygen percentage must be as high as possible, and no anesthetic is as suitable as cyclopropane. If avertin or a barbiturate had any considerable part in the anesthesia, cardiazol or coramine should be given intravenously—sufficient to produce the desired result.

The preventive treatment of primary heart failure consists of preöperative atropine or scopolamine to inhibit the vagus; the avoidance of the chief culprit—chloroform; avoidance of excitement during induction of anesthesia and of premature operative stimuli; exceeding caution in the use of adrenaline—absolutely contraindicated with chloroform or cyclopropane.

Intravenous, intramuscular or subcutaneous injections are clearly useless without a circulation. For intracardiac injection the drugs most commonly in use are adrenaline and coramine. Coramine has no direct action on the heart and is not indicated. Adrenaline can initiate vntricular fibrillation under chloroform and, in sufficiently large doses, under ether.

A girl aged 17, was to be anesthetized for tonsillectomy. The surgeon liked chloroform. She had atropine gr. 1/75. Anethesia was induced with ethyl chloride and chloroform-ether mixture, then chloroform and oxygen by means of a Davis bag. Shortly she was not breathing; she was pulseless and the heart could not be heard. The *auricle* was pierced with a handy lumbar-puncture needle; the needle swaying to and fro. The pulse returned and breathing started promptly. The operation was completed with oxygen and ether, and all was well.

Ventricular puncture without injection is ineffectual. Cardiac massage through the intact abdominal wall is a waste of valuable time in adults. Massage through the intact diaphragm, though less effective than direct massage, is often adequate. Massage should be carried out at less than half the normal rate of heart beat to allow filling. Compression should be gradual and relaxation rapid. There should be pauses as soon as even feeble beats have begun. Where irritability is so far lost that no response is found to direct massage, the injection of adrenaline into the ventricle may still produce results. Massage should be resumed as soon as the injection is completed.

Routine measures suggested for resuscitation after sudden heart failure are:

Clearing of the airway and Sylvester's method of artificial respiration and rhythmical inflation with oxygen from a suitable machine, or rhythmical compression of a closed re-breathing bag. When an endotracheal tube is used the lung may be ruptured by over-enthusiastic insufflation. The movements of respiration are of valuable assistance in re-establishment of the circulation.

As soon as artificial respiration has been established, *auricular* puncture should be made with any available needle of 3½ in. or more. Hewer's cardiac-puncture needle or a lumbar-puncture needle—piercing the chest wall in the third right intercostal space ½in. from the sternum and passing inwards and towards the midline. The attendant risks are small compared with those of delay. Should auricular puncture fail to produce an immediate response, cardiac massage must be started through an upper abdominal incision, sterility being secondary to the necessity for speed.

If massage through the diaphragm is not effective within four minutes of the onset of heart failure, a 3 in. incision must be made in the diaphragm and an artificial circulation established by direct massage, 40 compressions a minute. If a satisactory circulation is not established, or if spontaneous beats have not appeared in 10 minutes; then, and only then, inject 10 m. adrenaline 1:1000 into the ventricle through the 4th l. intercostal space 2 in. from the border of the sternum, as a measure of desperation.

It seems justifiable, if the surgeon's hand confirms ventricular fibrillation, to inject into the cavity of the left ventricle 10 c.c. of 2% procaine.

If a satisfactory circulation is not established within four or five minutes, permanent damage to the brain is likely to occur, and death at a later period.

The discussion amplified the essay:

Dr. R. T. Grant: Some apply the lable, shocked, to any patient, however, slightly wounded, who seems ill, is pale and has a weak pulse. Others restrict it to cases displaying low b.-p., a rapid thready pulse, pallor and cyanosis, a cold and sweating skin, shallow rapid respirations and often vomiting, restlessness, a lessened sensibility and a dulled mental state. To the majority, the criteria of "shock" are severe injury and low b.-p. Our first job is to pick out the seriously ill, then recognize those likely soon to become seriously ill if left without treatment. The remedies are rest,

warmth and the head-down position, morphine, adrenaline, pituitrin, oxygen, fluids by mouth and rectum; finally, intravenously, blood or blood substitutes.

When uncertain whether the patient has lost much blood or little, we can merely guess as to the nature and extent of his injuries and what part nervous influences are playing. In cases of severe injuries and *possibly* severe blood loss, transfusion should be begun at an early stage.

The term, rest, does not imply that the patient should be kept still. It means making him feel comfortable by putting in a warm bed, removing his clothes, examining his wounds promptly, allaying his fears and his pain, and attending to his wants. Morphine is given as a routine, ¼ gr. There are instances of subsidence of a raised b.-p. to normal levels, others in which a low pressure has risen to normal levels, coincident with the relief of pain. When peripheral circulation is greatly reduced subcutaneous injections may be but slowly absorbed. There are other remedies to be usefully employed, such as chloral and the bromides by mouth and rectum.

Warmth is also useful but heat must be applied with care and the heating withdrawn when the patient begins to feel warm. The raising of the foot of the bed is in order if the b.-p. is low.

Severely injured patients require transfusion. Of 100 cases reported recently only 17 did not receive transfusion.

As to need for transfusion, the emphasis is on the severity of the injury and blood loss, rather than on b.-p. For the severely wounded, with evidence of blood loss, transfusion should be begun without delay, no matter what the b.-p. Anormal b.-p. and pulse-rate and even a good facial colour are compatible with severe injury and much loss of blood. Low b.-p., pallor, sweating, nausea do not necessarily mean severe injury or blood loss, and not all cases displaying these signs require transfusion.

If in doubt it is better to err on the side of giving transfusion. I have never seen a pint or two of blood or plasma do harm. With small transfusion, not more than 1 or 2 pints, I do not think it matters much whether blood or plasma is used; but with larger transfusions more blood than plasma should be given.

It does not seem wise to allow the hemoglobin level to fall below 50%. We have to ensure an adequate supply of oxygen to damaged and infected tissues. The largest amount given was 13 pints given over a period of 28 hours, this because of continued bleeding. Maintenance of systolic b.-p. of 100 and over means an adequate amount has been transfused.

For early transfusions a rate of a pint in a quarter to half an hour is satisfactory, later a slower rate, except for renewed bleeding. When the veins are tightly constricted the fluid will not run freely into the veins and must be given under pressure, either by means of a bulb attached to the bottle, or by a two-way syringe. In one case two pints were administered in 19 minutes with general improvement and a rise of b.-p. from 40/20 to 130/70. The rise of pressure after a rapid transfusion is not always maintained, whereas with a slower injection of fluid the more gradual rise of b.-p. is sustained. Rapid transfusion is not always well tolerated. In the absence of continued bleeding, if no material improvement takes place after giving two or three pints of blood or plasma, later improvement is unlikely.

Operation should be carried out as soon as possible after the patient is revived; *the least that will suffice should be done as quickly as possible*, and blood loss must be kept minimal. The patient requires to be watched for signs of collapse, and transfusion ought to be continue dat drip rate during operation so that at any time it can be speeded up to compensate for further hemorrhage.

Mr. R. Vaughan Hudson: The results did not markedly improve until an attempt was made to anticipate shock, so that the employment of posture, avoidance of movement and use of warmth were supplemented by whole-blood transfusion, commenced in the anesthetic room, maintained during the operation and postoperatively. In the road casualty these methods were employed as soon as the patient was admitted to the ward, in order to control and combat shock.

Provided that surgical technique was correct and infection avoided, recovery was satisfactory, and major surgery was made possible without primary or secondary shock; but after a varying postoperative time interval, conditions mimicking secondary shock were produced in cases complicated by the non-closure of large exposed areas, or by infection. In these cases death was attributed to shock and circulatory failure produced again by a factor derived from the site of the wound.

The apparently weak may survive the identical injury which kills the healthy. The apparently hopeless patient frequently survives. Although *whole blood is considered by us to be the best anti-shock measure*, we have relegated its use in war time to exsanguinated patients and employed the *more practical plasma*, and, in a few cases, serum. These substitutes have been highly efficacious.

By the removal of dead and dying tissue and their products and immobilization of the injured area, we are preventing further injury and absorption of the products of damaged tissue, relieving

pain and preventing further shock.

Dr. M. D. Nosworthy: It is seldom wise to operate upon a patient in shock; there being no doubt that effective resuscitation will convert such a patient from being a bad operative risk into a fair one. First-class resuscitation has given excellent results in spite of second-class surgery and third-class anesthesia. When a limb is so mangled that it will have to be amputated some time, unless resuscitation produced an immediate and dramatic improvement the operation is better performed at once, while the intravenous therapy is continued. Anesthesia is the lightest possible.

Morphine is likely to increase any anoxia present. Half a grain is the standard dose at some first-aid posts. An adequate effect can be obtained from scopolamine with a much smaller dose of morphine. Scopolamine, in contrast to morphine, allays fear.

Restlessness is a common sign of oxygen-want. Oxygen therapy may be invaluable in shock, also in cases of heavy morphine sedation. Restlessness without pain is better controlled by intravenous paraldehyde. When a high tension of oxygen has had to be used its use should be continued in the recovery ward until such time as a reduction in oxygen tension is no longer followed by an increase in pulse rate.

Move the shocked patient as little and as gently as possible. The foot of the bed should be raised a good 18 inches from the ground. This applies also to patients with chest injuries. If the patient is more comfortable and less dyspneic when propped up, his head and shoulders can be raised while the foot of the bed is still blocked. Hot drinks may be given with advantage right up to the time of operation except when laparotomy is to be performed.

The b.-p. level is often an unreliable guide to the patient's condition. The circulation may quickly collapse, the pulse becoming impalpable and the b.-p. unrecordable. The pulse pressure is important. I should be much happier about a patient with a pressure of 80/50 than with one of 90/75 mm.

When it has been decided to give intravenous therapy even if blood is ultimately to be used, it is better to start with plasma which runs much more readily into the veins of a shocked patient.

After a patient has been resuscitated by intravenous therapy it is wise to keep the drip running if the surgery is likely to be severe, because it may be impossible to resuscitate a second time if shock is permitted to return.

When the patient's powers of compensation are being, or are likely to be, overtaxed by blood loss or trauma, I always give intravenous therapy irrespective of the b.-p. readings.

Plainly, the intravenous injection of blood and plasma is regarded as the *sine qua non* by those who have had so much experience with cases of shock and hemorrhage. We all should take this to heart and be stimulated to give more of our own blood and use our influence more insistently that every healthy person give blood for use as whole blood or as plasma for the duration of the emergency.

It may well be that we are using adrenaline unwisely, even dangerously, in some of our attempts at resuscitation.

Auricular puncture—entirely new to us—appears to have established itself as a valuable means of resuscitation in some desperate cases.

Blood-pressure readings have not been found reliable as indicators of the seriousness of the state of shocked and bled patients.

DIAGNOSIS AND TREATMENT OF THE UNCONSCIOUS PATIENT

Ascertain the events that led to unconsciousness —age, onset, injury, similar attacks in the past, addiction to drugs, prior treatment for high blood pressure, heart, stomach, kidney or liver disease, pregnancy—all of these must be investigated.

Loss of consciousness can be graded by testing a patient against various stimuli and noting the response to command, touch, movement of the limbs and pain. To determine whether the patient is feigning, the response to pain may be the only differentiating factor. The physician must realize at the moment that unconsciousness may result as a catastrophe from injury to the osseous, muscular, cardiovascular, respiratory, cerebrospinal, gastrointestinal, genitourinary or glandular system.[1]

Other valuable points made include:

Coma with convulsions, rigidities and paralyses has its origin in the central nervous system or the cerebrovascular bed. When cyanosis, increased respiration and hemoptysis are the predominant symptoms, the source is in the respiratory tract. When irregular pulse and signs of circulatory failure are evident, in the cardiovascular system, the other major tracts also yield characteristic symptoms and signs.

One might encounter cardiac failure with lesions of the central nervous system; similarly, in uremia, the renal phases may be overshadowed by the cerebral manifestations. The predominant signs give one a good lead as to the primary system involved.

The next step is to identify the disease causing the coma. Emergency therapy such as artificial respiration, stomach lavage, medicinal stimulation, tracheotomy, or control of hemorrhage may be indicated. These procedures may be necessary to

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1. D. R. Murdock, Greensburg, in *Penn. Med. Jl.*, July

DOCTOR ERNEST WILLOUGHBY CARPENTER

Ernest Willoughby Carpenter was born in Charleston August 24th, 1874.

He received his preliminary and medical education in Charleston, graduating from the Medical College of the State of South Carolina in 1895 at the age of 21. For the next ten years Dr. Carpenter prepared himself for his lifetime specialty working in the Charleston City Hospital, St. Francis Xavier Hospital and as City Physician in Charleston for several years.

In 1902 he moved to Greenville, did general practice and further pursued his studies in ophthalmology and laryngology. In 1905 he limited his practice to diseases of the eye, ear, nose and throat and continued steadily in the practice of this specialty until a few days before his death. Preparing himself for his life work he pursued graduate work in the Polyclinic in New York, Wills Eye Hospital in Philadelphia, the Polyclinic in Philadelphia, Eye and Ear Infirmary in New York, Moorefield's in London and the Nose and Throat Clinic in Vienna.

During his professional career Dr. Carpenter published fifty-four original articles. He held membership in the County, State, Tri-State and American Associations. He was a fellow in the American Academy of Otology and Laryngology and the American College of Surgeons.

During the first World War he served as a member of the Medical Advisory Board and during the present war was a member of the Selective Service Draft Board. For many years he had been Visiting Chief to both the General and the St. Francis Hospital.

Besides his many professional connections and activities, Dr. Carpenter found time to do many other things. Not least of thse activities was his homelife. He was essentially a family man. Surviving him are his widow, the former Miss Katherine McNeill, and six children, two daughters and four sons. He sent all of the children through college and each son took graduate work, two in medicine, one in law and another in letters.

In his office and home books covering a wide field of subjects crowd the shelves. He gave expression to his literary aspirations by many papers which he presented before the Thirty-Nine Club.

He affiliated himself with the First Baptist Church when he came to Greenville. In this church all of his children were baptized and his funeral conducted.

His life was one of continuous activity. He kept the longest office hours in town, starting frequently at 7 in the morning and working straight on through the day. Up until a year before he died he missed practically no time on account of physical disability. Instead of vacations he went to medical meetings and attended clinics. He enjoyed a tremendous practice. His friends and patients came from every walk of life.

He loved his patients and spent himself for them. While he put their fears at rest by some idle talk he would go directly to the heart of their troubles. With skill he handled his instruments and soon the work was done. His cheerful and quiet manner steadied the nervous sufferer while his courage and firmness built up confidence akin to faith. He used consultants freely. Often he led the referring physician to make further studies that would unfold the nature of the disease in the patient sent to him with symptoms in his field of pathology elsewhere. He burnt the midnight oil and encouraged the keeping of accurate records.

Among his friends are many physicians who will miss his jibe, his friendly encouragement and good counsel. His passing was swift and painless from rheumatic heart disease. In his last hours he experienced no fear; he realized his work was done, set his house aright, and died, as he had lived, a man.

—George R. Wilkinson.

THE AMERICAN CONGRESS OF PHYSICAL THERAPY

The twenty-first annual scientific and clinical session will be held September 9th-12th, 1942 at the Hotel William Penn, Pittsburgh. The annual instruction course will be held from 8:00 to 10:30 a. m., and from 1:00 to 2:00 p. m. during the days of September 9th-11th and will include a round-table discussion group from 9:00 to 10:30 a. m., September 10th. The scientific and clinical sessions will be given on the remaining portions of these days and Saturday morning. A new feature will be an hour demonstration showing technic from 5:00 to 6:00 p. m. during the days of September 9th-11th. All of these sessions and the seminar will be open to the members of the regular medical profession and their qualified aids. For information concerning the seminar and program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

OSTEOPATHIC AMENDMENT DEFEATED

In the House of Representatives during a consideration of S.2025, which readjusted the pay of personnel of the Army, Navy and Marine Corps, Coast Guard, Coast and Geodetic Surgery and Public Health Service, Representative Costello, California, offered an amendment to the section pertaining to the appointment of commissioned officers in the Army, as follows: "Provided, That nothing in this section shall preclude the appointment of commissioned officers for service in the Medical Corps of the Army of the United States made in part from among graduates of reputable schools of osteopathy, who are licensed or eligible for license under state law to practice medicine, or osteopathy, as the case may be, and who are otherwise qualified under such regulations as the President may Prescribe." The amendment was rejected.



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NEWS

PROFESSOR ROYSTER RETIRES

Dr. Lawrence T. Royster has resigned from the medical faculty of the University of Virginia, in which he has served with distinction for 20 years, a period covering the greatest growth of the University Hospital.

On the occasion of the fire at the university of October 27th, 1895, he was one of the group of students who entered the burning Rotunda and lifted the Galt statue of Jefferson from its pedestal, drew it through the room on a mattress, eased it down the curving stair, and deposited it upon the lawn.

Dr. Royster engaged in the general practice of his profession in Norfolk for a period of 10 years. In 1910 he was the first physician in Virginia, and one of three in the entire South to limit his practice to pediatrics. His first clinic was at St. Vincent's Hospital and a few years later he became the founder and chief of staff of the King's Daughters Clinic which, under his guidance, developed into an institution of distinguished usefulness.

In 1823 Dr. Royster was asked by Dr. Theodore Hough, then Dean of the university's medical school, to return to his alma mater and become the head of that institution's department of pediatrics. This offer was promptly accepted.

Dr. Royster is a member of the State Board of Health, was for several years chairman of the School Board of Norfolk, and founder and past president of the Norfolk Society for the Prevention of Cruelty to Children. He is an ex-president of the Norfolk Association of Philanthropies, the Bonney Home for Girls, and honorary member of the Norflok County Medical Society and of George Washington University Medical School.

He is also a member of the Albemarle Medical Association, the Medical Society of Virginia, the American Medical Association, Southern Medical Association, American Pediatric Society, American Child Health Association, American Association for the Advancement of Science, the American Anthropological Association and the Association of Physical Anthropologists.

Dr. Royster also belongs to the Virginia Society of Cincinnati, and is a fellow of the Academy of Pediatrics; is a member of Sigma Chi, social fraternity; Alpha Omega Alpha, medical fraternity; Sigma Xi, scientific fraternity; the Raven Society, and Phi Beta Kappa.

He is the author of several books on pediatrics, notably that on *Nutrition and Development,* was coauthor with Dr. Henry Dwight Chapin of *Disease of Children,* and a contributor to Abt's *System of Pediatrics.* He is also widely known as a lecturer and as a writer on medical and sociological topics.

MARKER FOR DOCTOR SATCHWELL

In an address at the unveiling of a state highway marker to the memory of Dr. Solomon Sampson Satchwell, a founder of the North Carolina Medical society, and the first president of the State Board of Health, T. T. Murphy, secretary of the Pender county Board of Health, declared that "the greatest surgical operation ever performed by Dr. Satchwell was the amputation of Pender from New Hanover in 1875."

Mr. Murphy presented the marker on behalf of Pender county and the state of North Carolina to a group of relatives of the late. Dr. Satchwell, and Edward Sloan, a grandson of the former Confederate surgeon, made a brief speech of acceptance. The marker was unveiled by four great-grandchildren of Dr. Satchwell: Toss and Pamela Brice, of Dallas, Tex., and Ned and Mary Hunter Sloan, of Greenville, S .C.

GRANT TO HOPKINS FOR POLIOMYELITIS STUDY

A five-year, $300,000 grant to The John Hopkins University, for an intensive and long time study of infantile paralysis has been made by the National Foundation for Infantile Paralysis.

This is the largest single grant made by the National Foundation since its organization in 1938. The funds which make this and other research projects of the Foundation possible are contributed each year at the time of the national celebration of the President's birthday.

The regular meeting of the Catawba Valley Medical Society was held at the Nurses' Home of Grace Hospital in Morganton, the afternoon of July 21st, at 2:00 o'clock. *Program*: 1) Abdominal Pain, by Dr. Grace Jones, Lincolnton; 2) Recent Work on Stored Blood with Particular Reference to Its Use by the Armed Forces, Dr. John Elliott, Salisbury.

Dr. Augustine Washington Tucker, a Norfolk, Va., native, has been appointed administrator of St. Agnes Hospital, Raleigh. Dr. Tucker served as medical missionary in China for many years and was surgeon and chief of staff of two Shanghai hospitals when he was ordered home in the Spring of 1941.

Dr. R. H. Long, assistant superintendent and for more than 20 years a member of the staff of the State Hospital at Morganton, N. C., has tendered his resignation to become effective August 1. The resignation was tendered because of ill health in a letter to Dr. F. B. Watkins, superintendent, from Monroe, where Dr. Long is convalescing from a recent illness. Since suffering a severe heart attack two and a half years ago, Dr. Long continued under handicap in his position in order to be of some service to the hospital, although he was advised to give up active work.

Dr. Long is a member of state and national medical societies, the American Psychiatric Association, the Tri-State Medical Association, a diplomate of the American Board of Neurology and Psychiatry, and has written and published numerous medical articles and presented papers on psychiatric subjects before leading medical groups.

Dr. H. Hudnall Ware, Jr., Richmond, announces the association of Dr. W. C. Winn in the practice of Gynecology and Obstetrics.

Dr. M. C. Arney has associated himself with Dr. J. B. Helms for the practice of medicine in Morganton, N. C.

Dr. William Cummings Tate, Banner Elk, N. C., has been elected president of the Edgar Tufts Memorial Association. the position left vacant by the death of Mr. H. Tufts on June 15th of this year. The association consists of Lees-McRae College, Grace Hospital, Grandfather Home for Children, and allied enterprises. Dr. Tate has been chief-of-staff of Grace Hospital since 1910. Until the death of the Rev. Edgar Tufts, its founder, in 1923, Dr. Tate was his associate, and since that time he has been a co-worker with Mr. Edgar Tufts, the son.

Dr. Roy D. Halloran has been asked to assume the position of chief of the Neuropsychiatric Division of the United States Army, with headquarters in the office of the Surgeon General. Dr. Halloran will accept the appointment, with the rank of Colonel, and will report for duty on August 17th. Dr. Halloran has been for several years Superintendent of the Metropolitan State Hospital, Waltham, Massachusetts.

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THE CIGARETTE OF COSTLIER TOBACCOS

Dr. Edward H. Williams, first assistant resident physician at Westbrook Sanatorium, Richmond, Va., since 1935, has been commissioned a major in the Army Medical Corps and ordered to the Air Corps' Technical School at Miami Beach, Fla., with the psychiatric staff.

Major Williams is an alumnus of William and Mary College and was graduated from the Medical College of Virginia in 1930. He served as interne at Memorial Hospital, Richmond, and joined the Westbrook staff in 1931.

He is a member of the Medical Society of Virginia, the Richmond Academy of Medicine, the Southern Medical Association and the American Psychiatric Association. He is the author of several psychiatric studies.

Dr. Williams has reported for duty at Miami. At Westbrook the members of the medical and the nursing staff gave a dinner in honour of Dr. Williams and presented him with a wrist watch.

MARRIED

Dr. James Bain, of Portsmouth, and Miss Mildred Kennon Pettus, of Charlottesville, were married on July 11. Dr. Bain is stationed at San Diego.

Dr. William Swindell Credle, of Oxford, and Miss Margaret Elizabeth Franck, of Durham, were married on July 18th. Dr. Credle is a member of the Medical Corps of the service and is stationed at Field Hospital, Marine Barracks, New River, North Carolina.

Dr. Charles Edward McKeown, of Milwaukee, and Miss Margaret Parker, of Alexandria, Virginia, were married on June 26th. Dr. Parker is a member of the medical staff of the Hospital of the Medical College of Virginia.

Dr. Herbert Carl Lee, Milwaukee, Wisconsin, and Miss Davie Johnson Kinlaw, Lumberton, North Carolina, were married on June 6th. They will live in Richmond, Virginia.

Dr. Augustine Warner Lewis, Jr., of Aylett, Virginia, and Miss Roberta Scott Broaddus, of Bowling Green, were married on June 6th.

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Dr .Dan Wright, Greenville, North Carolina, and Miss Mildred Bacot Hutson, Aiken, South Carolina, were married on July 25th. Dr. Wright, Lieutenant in the Medical Corps, is stationed at Fort Jackson.

DIED

Dr. Charles Lewis Dillon, 73, (M.C.V. '99), of Boone Mill, Va., died July 22nd. Dr. Dillon was well known throughout Franklin County, had practiced at Boone Mill for the past 25 years.

Dr. Giles Mortimer Fleming, of Cleveland, North Carolina, died while asleep in his home on July 22nd. He was fifty years of age, a graduate of Davidson College, and a medical graduate of Emory University. Dr. Fleming did a large practice, and he was an influential factor in the civic life of his county of Rowan.

Dr. William McCully James, 62, an authority on tropical diseases and a pioneer physician to Panama, died in the Canal Zone on July 10th. He was a native of Richmond and was well-known to medical men of Virginia and Maryland.

He studied at the University of Virginia and at Johns Hopkins University—being a member of the Hopkins lacrosse team—and shortly after graduation went to Panama in the early construction days of the canal.

He was first identified with the hospital at Cristobal, Colon, and later one of the founders of the Herrick Clinic in Panama. While engaged in medical service under General Goethals he became interested in research on tropical diseases.

He was a major in the medical corps during World War I and at the time of his death held the rank of lieutenant-colonel in the Medical Reserve Corps.

Dr. Marvin E. Nuckols, 65, died July 20th, after a prolonged illness at a hospital in his home city of Richmond, Va. Dr. Nuckols, one of the most popular of Richmond's physicians, was active in the affairs of many medical bodies, one of them the Tri-State Medical Association of the Carolinas and Virginia.

Dr. Glenn Jones, 59, chief surgeon of the Southern Railway, died of a heart attack July 18th while going by train from Atlanta to Washington.

Dr. Horatio M. Acuff, 72, died July 16th at his home at Halifax, Virginia.

Dr. Horace Taylor Hawkins, physician for the Du Pont plant at Waynesboro, Va., since 1928, died at the local hospital after an illness of six weeks. He was a graduate of the Medical College of Virginia and served as a major in the Army Medical Corps during the first World War. He practiced medicine at Clover for many years before moving to Waynesboro in 1928.

Dr. Robert N. Graham, 64, was killed July 30th by a train at a railroad crossing at Huntington, W. Va. Dr. Graham was a member of the prominent Graham family of physicians of Russell and Tazewell Counties in Virginia. Dr. Graham, who had practiced medicine in the St. Charles coal fields since 1922, was a member of the Virginia and Lee County Medical Societies. He and his family, including his widow and daughter, Ann, were spending a two-week's vacation in West Virginia.

BOOKS

THE PATHOLOGY OF TRAUMA, by Alan Richards Moritz, M.D., Professor of Legal Medicine, Harvard Medical School; Lecturer in Legal Medicine, Tufts College Medical School; Lecturer in Legal Medicine, Boston University School of Medicine; Pathologist, Massachusetts State Department of Public Safety; Associate Medical Examiner of Suffolk County; etc. Octavo, 386 pages, illustrated with 117 engravings. *Lea & Febiger,* Washington Square, Philadelphia. Cloth, $6.00, net. 1942.

Chapters: I. Mechanical Injuries; II. Trauma and Infection; III. Trauma and Tumors; IV. Mechanical Injuries of the Cardiovascular System; V. Mechanical Injuries of the Respiratory System; VI. Mechanical Injuries of the Alimentary Canal; VII. Mechanical Injuries of the Liver, Gall Bladder, Bile Passages, Pancreas and Spleen; VIII. Mechanical Injuries of the Urogenital Tract; IX. Mechanical Injuries of the Central Nervous System; X. Mechanical Injuries of the Skeletomuscular System.

The author has taken note of the little attention paid by surgical writers to the pathological anatomy of lesions produced by trauma, and he has supplied a book containing this much-needed information. The book records the principal causes of injuries, their ways of bringing about disturbances of form and function, the morbid anatomic features of the lesions, the important complications and sequelae, and possible medico-legal bearings.

The book is aimed especially at meeting needs of doctors who are soon to enter military service, of medical examiners, of industrial physicians and surgeons, of lawyers concerned with compensation cases, and of general practitioners of medicine and surgery.

PAIN, by Thomas Lewis, M.D., F.R.S., Physician in Charge of Department of Clinical Research, University College Hospital, London; Fellow of University College, London. *The Macmillan Company,* 60 Fifth Avenue, New York City. 1942. $3.00.

The author acknowledges his inability to define pain, but says the usage of the term in this book will be clear enough for the reader. He proposes reviewing ideas of the mechanism of pain and bringing his own work in this field into perspective with the observations of others.

The sensations of touch, warmth, cold and their corresponding systems, are differentiated. Two systems of pain nerves in the skin are distinguished, one more rapidly conducting than the other.

The author conceives of hyperalgesia as a state brought on by the action of certain tissue substances resulting from tissue injury.

There are chapters on cutaneous tenderness and nerve injuries, pain and tenderness in ischaemic muscle, excitants of pain nerves, referred pain. Referred manifestations of somatic and visceral

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origin are compared. The discussion of the pain, tenderness and rigidity of visceral disease has instruction for us all; and the principles laid down for determining the clinical use of pain.

Pain brings most patients to their doctors. It is a subject on which there is little precise information. Its being studied minutely by so eminent a physician as Sir Thomas Lewis bodes good for us all.

THE CARE OF THE AGED (Geriatrics), by Malford W. Thewlis, M.D., Atending Specialist, General Medicine, United States Public Health Hospitals, New York City; Attending Physician, South County Hospital, Wakefield, R. I.; Special Consultant Rhode Island Department of Public Health. Fourth edition, thoroughly revised, with 50 illustrations. *The C. V. Mosby Company,* 3525 Pine Boulevard, St. Louis. 1942. $7.00.

The great increase in the number of the old in the population has lately directed to the health problems of the old the special attention of a great many physicians and surgeons. The author was one early in the field, as is shown by his book having reached its fourth edition and by the excellence of the text.

No attempt at an analysis will be made, only this statement: Every doctor who has to do with the health care of those who are, or are soon to be, old should have a copy and study it daily, for his patient's and his own great profit.



ESSENTIALS OF PATHOLOGY, by Lawrence W. Smith, M.D., Professor of Pathology, Temple University School of Medicine; formerly Assistant Professor of Pathology, Harvard Medical School; and Associate Professor of Pathology, Cornell University Medical School; and Edwin S. Gault, M.D., Associate Professor of Pathology, Temple University School of Medicine; with a foreword by James Ewing, M.D., Memorial Hospital, New York City. Second edition. *D. Appleton-Century Company, Inc.,* New York City and London. 1942. $10.00.

That great pathologist, Dr. James Ewing, says in the foreword that the authors "have succeeded to an admirable degree in covering the broad field of pathology from the standpoint of the student's needs and the laws of psychology."

The illustrations are many and of excellent quality and 295 case histories are abstracted.

It only remains to be pointed out that "student" here applies to the graduate as well as to the undergraduate in medicine.

THE BIOLOGIC FUNDAMENTALS OF RADIATION THERAPY: A Textbook by Friedrich Ellinger, M.D., Research Fellow, Radiotherapy Department, Monefiore Hospital, New York City. Formerly Privadozent in Radiology at the University of Berlin; with a preface by Maurice Lenz, M.D., Associate Clinical Professor of Radiology, Columbia University, Director of City Cancer Hospital, Chief of Radiotherapy Departments of Presbyterian Hospital and Montefiore Hospital, New York City. English translation by Reuben Gross, M.D., Formerly Resident Physician, Radiotherapy Department, Montefiore Hospital, New York City. 1st Lieut. M.C., U.S.A. *Elsevier Publishing Co., Inc.,* New York City. Distributor: Nordeman Publishing Co., Inc., 215 Fourth Ave., New York City. $5.00.

The author tells us that this book represents an attempt to gather in form for didactic presentation the results and problems of radiation biology in so far as they are of importance in therapy. He describes the nature of the problems of these forms of treatment; the action of Röntgen rays and the radium rays on the skin, the basic tissues, the central nervous system—on all the systems and the organs of special sense. He includes in his consideration accounts of effects on the course of pregnancy and on the fetus, and on the progeny. There are chapters too, on the effects on inflammation and benign growths; and, as a matter of course, minute treatment of the subject of treatment of malignant tumors.

The effects of corpuscular rays, of Grentz rays, and of ultraviolet light are discussed. The last hundred pages are given over to descriptions of further effects of light and general radiation biology and therapy.

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the use of these rays, and a good deal of value not generally known as to the limitations of the need for and therapeutic usefulness of ultraviolet radiation.

CENTRAL AUTONOMIC REGULATIONS IN HEALTH AND DISEASE, With Special Reference to the Hypothalamus, by Heymen R. Miller, M.D., Associate Attending Physician, Montefiore Hospital, New York City; introduction by John F. Fulton, M.D., M.A., D.Phil., (Oxon.) Sterling Professor of Physiology, Yale University. *Grune & Stratton,* 443 Fourth Avenue, New York City. 1942. $5.50.

Professor Fulton's introduction lays emphasis on the description of the part played by the cerebral cortex in making delicate autonomic adjustments, and on its more detailed attention given to the functioning of the hypothalamus. The author believes that many patterns of clinical disease are expressions of autonomic activity which may or may not involve somatic change. Rapidly growing interest in the hypothalamus, as more and more evidence of the importance of its functioning is uncovered, accounts for the amount of space devoted to this part of the brain.

Chapters: General Physiology of the Autonomic Nervous System, Regulation of Body Temperature, Regulation of Water and Minerals, Central Regulation of Metabolism, Regulation of Circulation, Autonomic Regulation of Respiration, Nervous Regulation of the Alimentary Tract, Nervous Regulation of the Genito-urinary System, Central Regulation of the Reproductive System, Regulation of the Sleep-walking Rhythm, Central Mechanism of Emotions, Response of the Autonomic Nervous System to Pharmacodynamic Substances, Anatomy of the Peripheral Autonomic Nervous System, Anatomy of the Hypothalamus, Fiber Connections of the Hypothalamus.

For the use of readers who wish to go further into any phase of the subject, nearly 1400 references are cited.

The book is written to be of help in the prevention and cure of disease. Its careful study and application to this use will be rewarded.

TRERATMENT IN GENERAL PRACTICE: By Harry Beckman, M.D., Professor of Pharmacology, Marquette University School of Medicine, Milwaukee, Wisconsin. Fourth Edition, thoroughly revised. 1015 pages. *W. B. Saunders Company,* Philadelphia and London. 1942. Price $10.00.

Included for the first time in this present edition are: Acute infectious hepatitis, acquired hemolytic anemia, alphatocopherol (vitamin E) deficiency, Australian X disease, chromoblastomycosis, chronic infectious spondylitis, delayed menstruation, epidemic diarrhea of the newborn, epidemic encephalitis, equine encephalomyelitis, familial microcytic anemia, familial non-hemolytic jaundice, Felty's syndrome, fibrositis, gas gangrene, geriatrics, Haverhill fever, histoplasmosis, hyoscyamus poisoning, hypoprothrombinemia (vitamin K deficiency), icterus gravis neonatorum, intermediary toxic hepatitis, intestinal influenza (epidemic vomiting and diarrhea), Japanese encephalitis, lumbago, Marie-Strumpell syndrome, Meniere's disease, muscular rheumatism, myostitis, nicotinic acid deficiency, encephalopathy, premenstrual tension, pyridoxin (vitamin B_6) deficiency, Q fever, riboflavin deficiency, Russian encephalitis, St. Louis encephalitis, schistosome dermatitis (swimmer's itch), sporadic encephalitis of unknown origin, Still's disease, strontium poisoning, sulfonamide toxicities and contraindications and combinations and antidotes, target-cell anemia, torticollis, toxoplasmic encephalitis, toxoplasmosis, trench fever, tsutsugamushi fever, and von Bechterew's syndrome.

For the benefit of those who are unacquainted with this book a sample from this edition:

For the ordinary *cold, grippe* and *epidemic influenza* the successful treatment of all three is the successful prophylaxis of their complications.

Bacterial Vaccines.—I am still unconvinced of the worth of either the orally or subcutaneously administered types.

Virus Vaccines.—There is as yet no convincing evidence that the classical vaccine of this type has effectively prevented occurrence of the disease.

The use of the gauze mask and the antiseptic or astringent nasal spray have yet to prove their cases in carefully controlled clinical experiments.

There is not as yet any scientific evidence that excess of any of the vitamins will prevent a cold, or grippe or "flu" or have any effect in curing it.

There is not the least warrant for the use of these drugs (sulfonamides) in the attempt to prevent the occurence of pneumonia; indeed one can only look upon such practice as reprehensible in view of the toxic potentialities of these drugs.

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THE DIAGNOSIS OF APPENDICITIS

(C. N. Carraway, Birmingam, Ala., in *Med. Times,* July)

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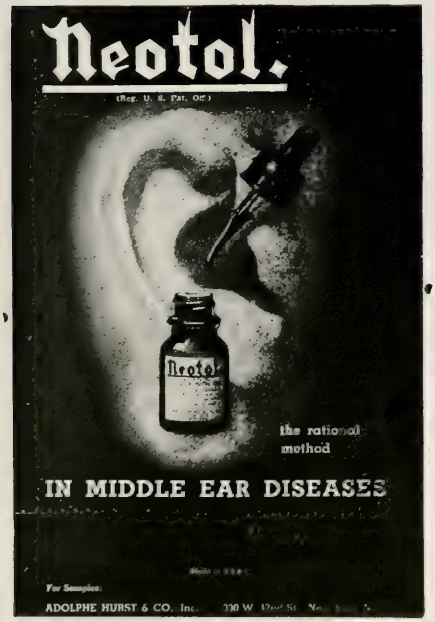
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LEGISLATION IS PENDING in Washington (H.R.7231 introduced by Congressman Dickstein, New York) which would provide for the creation of a medical school in each corps area for the training of physicians for the armed forces and the U. S. Public Health Service. Each such school would enroll a minimum of 295 students; and the course of study would be the same as that prescribed by the American Medical Association. Graduates of these schools would be commissioned in the Army, Navy or Public Health Service and would have to continue in service at least ten years, unless the Secretary of War, the Secretary of the Navy or one of the Surgeons General of the United States as the case might be, certified there was no further need for their services.

J. O. FITZGERALD, M.D., of Richmond, Virginia, was awarded a medal for his photograph *Three Jonquils* at the June Exhibit of the American Physicians' Art Association held at Atlantic City while in Convention with the American Medical Association. There were 350 original art works. . Seventy-three prizes were awarded. More than 200 new members joined the Art Association. The next Exhibit will be held at San Francisco in 1943. Information may be obtained from Dr. Francis H. Redewill, Flood Building, San Francisco.

NEW YORK INFIRMARY FOR WOMEN AND CHILDREN is located at 321 East 15th St. It was founded in 1853 when the Misses Elizabeth and Emily Blackwell, graduates of a medical college, founded the first medical charity conducted by female physicians and the first hospital in the world for the instruction of women in medicine and surgery. The first capital was $50. Horace Greeley and Charles A. Dana were on the first board of trustees. The sisters first feared that death certificates signed by women doctors would not be recognized by the authorities. After four years, the hospital received government recognition and support. The hospital received a charter as a college in 1865.

PAINTINGS OF EARLY ITALIAN PHARMACIES are now on exhibit at Eimer and Amend Apothecary, 49 East 34th Street, New York City. The paintings are about 300 years old and depict in detail the interiors of Italian Apothecary Shops of the early seventeenth century. The painter is unknown but his style is typical of the Italian School of that time.

These oil paintings belong to the Fisher Collection of Alchemical and Historical Pictures, the most complete collection pertaining to the early history of chemistry. They were formerly a part of the Collection of Sir William Jackson Pope, the internationally famous chemist, who for many years occupied the Chair of Chemistry at Cambridge University, England. The entire Pope Collection of Alchemical Pictures, the largest of its kind abroad, was acquired in 1940 by Chester G. Fisher, President of Eimer and Amend, who brought it to America and added it to his own extensive collection of similar pictures.

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ULTRAVIOLET IRRADIATION OF AIR REDUCES INFECTIONS IN AN INFANTS' HOSPITAL

Our own Deryl Hart, of Duke, has taken the lead in proving the value of ultraviolet rays in destroying pathogens conveyed by air.

Here is abstracted an article[1] which promises to help greatly by applying this agency to the prevention of infection of patients by other patients in hospital.

Studies have been made in the Infants' Hospital of Boston to determine to what extent infections continue to occur in a modern, cubicled infants' ward; and to ascertain what additions to current technic might be necessary for the control of secondary infections, especially those of the respiratory tract.

A survey of the records of the Infants' Hospital for 1935 and 1936 showed 12.6%, of the 1,455 patients admitted during the two year period contracted infections in the hospital. This survey was followed by 1937-1938 by a more careful study.

Some diminution in the transmission of organisms was found to follow the masking of all persons entering the ward, but masking, even with a special type of mask, was not sufficient to eliminate secondary infections.

In earlier studies with ultraviolet light barriers in the isolation ward of the Children's Hospital, mercury vapor quartz lamps were used. In the present study, 15 watt, low pressure mercury lamps enveloped in high transmission glass were employed. About 80 per cent of the rays emitted by these germicidal lamps are said to be of 2,537 angstroms, a wavelength which is stated to give maximum bactericidal effect.

The current used was the ordinary lighting circuit, 110 volts, direct current. Each lamp used about 0.33 amperes and put approximately the same load on the house current as does a 30 watt mazda bulb.

Each lamp was provided with an aluminum trough of a high reflection coefficient, which projected the rays in the desired direction and protected patients and personnel from direct irradiation. The precaution was taken of placing cotton curtains behind the troughs to prevent direct exposure of infants to the light. After the first week the lamps were operated daily from 8 a.m. to 10 p.m. The same personnel and ward facilities served both an irradiated and a control group of cubicles, while a separate nursing staff cared for the premature infants, housed in a special air-conditioned room. In the units without lamps masks were worn by visitors and by the personnel, while in the wards protected by lamps no masks were used. Individual gown technic and scrubbing of the hands between attendance on different infants were continued in both wards.

The air in each ward was analyzed bacteriologically every week by Wells' method.

The average count in the infants' wards ranged from 180 to 250 colonies per 10 cubic feet of air, while counts made in the air-conditioned nursery for premature infants showed the lower figures of 15 to 20 colonies.

The types of organisms most commonly found were *Staphylococcus aureus* and *albus*, fungi, *B. subtilis, B. coli, B. alcaligenes faecalis*, occasionally diphtheroids and micrococci. Hemolytic streptococci were occasionally found, and at such times similar organisms were usually recovered from the nasopharynx of patients or personnel. Pneumococci were occasionally found, and at such times sions.

During the first week the counts dropped almost 90%, so that the figures resembled those for counts in the nursery for premature infants.

When a streptococcic infection developed in one of the infants, culture of the air was positive for hemolytic streptococci on the same day that the cultures of material from the patient were reported positive for that organism. Cultures of material from the nose and throat were made for the other patients and for two physicians and 12 nurses, with positive results for one nurse and one physician. In this nursery the personnel were all masked and persons with evidences of any infection of the respiratory tract were rigidly excluded.

In an unirradiated ward, suppurative otitis media developed in 2 patients from whom cultures on admission had revealed nothing of importance, and in both instances hemolytic streptococci were recovered. One other patient in that ward harbored the same organism. In the same ward otitis media developed in a cretin, and on culture pneumococcus type XIV was discovered, while the culture made on admission had been negative for this organism. In a neighboring cubicle was a patient with pneumonia caused by type XIV pneumococcus.

Again, in an unirradiated ward pneumonia developed in a patient from whom pneumococci type XVIII were recovered. Two days previously a patient who had had pneumonia due to the same type of organism had been discharged from the next cubicle.

Also in an unirradiated ward pneumonia due to the type XXXIII pneumococcus developed in a pa-

1. Fé del Mundo, Boston, and C. F. McKhann, Ann Arbor, in *Am. Jl. Dis. Children*, 1941.

tient with eczema. Another patient with pneumonia due to this organism occupied a cubicle in the opposite corner of that ward.

None of the personnel contracted any serious or unusual infections during the period of the study, nor could it be stated that the 8 mild infections of the upper respiratory tract which did occur were acquired in the wards. The health of the nurses in the ward under study seemed better than that of nurses in other parts of the hospital.

The best evidence indicating that many of the secondary infections were air borne is found by comparing the incidence of such infections in the control units with that in the units irradiated with ultraviolet light.

The lamps appear to have reduced the number of infections acquired by patients in the hospital during the period of study, while the masking of personnel apparently had little influence on the incidence or severity of secondary infections.

Although the initial cost for installation of the lamps might seem high, the current consumed was calculated to cost only about 70 cents daily for both units.

With all commonly practiced precautions, hospital infections, particularly of the respiratory tract, have continued to occur in sizable numbers in an infants' hospital.

Contamination of the air with organisms pathogenic for the respiratory tract could be demonstrated in the wards of the hospital, and at certain times and with certain diseases aerial transmission of organisms seemed to be the mode of spread of disease.

A limited experience with ultraviolet irradiation gave results that seemed to be significant and well beyond the limits of error in that while in a control ward the hospital infection rate during the winter of 1939-1940 was 12.5 per cent, in a ward in which conditions were entirely comparable except that each cubicle was protected across the front and across the top by ultraviolet radiation the cross infection rate was 2.7 per cent.

UNCONSCIOUS—From page 474

save the patient's life *with or without a diagnosis.* During this time it is essential to placate the family.

The history of ingestion of drugs should never be considered as the cause of coma until a complete physical examination has ruled out a disease of one or other of the major tracts. Scan the immediate surroundings for signs of violence; note the odor in the room. If indications of a struggle are present, notify the police. Similarly, containers of barbiturates, opiates, or other narcotic medicinals should be looked for.

The patient's breath—alcohol?, the acetone of the diabetic? the odor of uremia? or the mousy smell of diptheria? Color of the skin—cherry-red color indicates carbon-monoxide poisoning; cyanosis, suggesting pneumonia or cardiac decompensation; pallor, pointing to hemorrhage or severe anemia, and jaundice to the terminal stages of liver disease. Needle punctures seen in narcotic addicts; evidence of trauma severe enough to produce surgical shock.

Examine all the orifices of the body and include looking for blood. Bleeding from the nose and ears suggests a possible fracture at the base of the skull. Frothy hemoptysis leads one to suspect a ruptured aneurysm, pulmonary embolism, or chest wound. Hematemesis points to a ruptured esophageal varix or a bleeding gastric ulcer. Vaginal hemorrhage leads one to suspect the complications of pregnancy.

Muscular twitches suggest uremia; convulsions—epilepsy, eclampsia, cerebrospinal syphilis and tetanus. Low temperature suggests shock as the result of hyperinsulinism; a rapid pulse—infectious disease, poisoning, shock, or paroxysmal tachycardia. A slow pulse is found in heart block, cerebral tumors, and intracranial hemorrhage; irregular pulse in auricular fibrillation.

Stiffness of the neck and Kernig's and Babinski's signs suggest cerebrospinal pressure from infection or hemorrhage; a hemiplegia, particularly with distortion of the face, a cerebral episode. Degree of dilation varies with pupil depth of unconsciousness, Unequal pupils may be significant when other signs point to intracranial pressure. By the eyegrounds a diagnosis of arteriosclerosis, uremia, and increased intracranial pressure may quickly be made when sclerotic vessels, hemorrhage, albuminuric retinitis, or palpilledema is evident. In a case of diabetic coma, the eyeballs may be soft on palpation.

Scars or recent injuries of the tongue may indicate epilepsy. Distended veins in the neck, heart failure and pulsations in the suprasternal notch are present in aneurysm. The chest should be examined for consolidation or fluid; the abdomen for tumor, ascites, enlarged liver or spleen. *Possibility of a ruptured viscus or strangulated hernia must always be borne in mind.* In a female a vaginal examination is imperative to eliminate the complications of pregnancy.

Make a lumbar puncture to determine increased intracranial pressure, hemorrhage, or infection. To diagnose alcoholism as the cause of coma in a patient having an alcoholic breath may mean overlooking brain injury attendant on a fractured skull.

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JAMES M. NORTHINGTON, M. D., Editor

VOL. CIV CHARLOTTE, N. C., , SEPTEMBER, 1942 No. 9

Lesions of the Intervertebral Disk*

With Special Reference to Their Atypical Manifestations

Gayle Crutchfield, M.D., University, Virginia
From the Department of Neurological Surgery, University of Virginia

A CLEAR UNDERSTANDING of the various pathologic and degenerative processes that affect the intervertebral disks** leads to the inescapable conclusion that almost all cases of sciatica, with or without low-back pain, are the result of these lesions. For some time after the important contribution by Mixter and Barr[1] it was generally believed that comparatively few cases could be explained on this basis, but then we were thinking only in terms of posterolateral herniation of the nucleus pulposus which actually represents the end stage of the pathologic process. Now it is possible to diagnose clinically and to demonstrate at operation other lesions; *i.e.*, posterior displacement of the disks and soft protruding disks which together with posterolateral herniations of the nucleus pulposus offer for the most part a solution of the problem of low-back pain and sciatica.

Trauma undoubtedly plays an important role, at least in the initiation of symptoms, since about one-half of the patients with disk lesions give a definite history of slight injury followed by low-back pain which immediately or later is associated with pain in one or both lower extremities. Furthermore, many patients whose symptoms come on spontaneously are persons who do heavy work which subjects them to repeated trauma. However, the fact remains that these lesions are frequently found in patients who lead sedentary lives and who give no history of injury whatsoever. This, together with the fact that disk lesions are almost never found in cases of severe spinal injury, obviously suggests the probability of an inherent structural weakness of the annulus fibrosus or a preëxisting degenerative process in the nucleus pulposus as an important factor in the eventual disruption of the disk whether or not trauma precede the onset of symptoms.

During recent years the management of patients with disk lesions has been greatly improved. Observations on the clinical manifestations of these lesions by Semmes[2], Spurling and Bradford[3], and Love[4] have practically eliminated the need of contrast media (lipiodol, air) for diagnosis except in atypical cases, especially those in which lesions above L_4 are suspected. Simplification of the operation by Semmes and by Love has reduced the surgical risk to a minimum.

In 1939, Semmes proved the value of clinical studies by reporting a series of cases in which the lesion in all sixteen patients was verified at operation without the previous use of a contrast medium of any kind. Since then it has become routine in many neurosurgical clinics to advise

**Hereafter, for brevity, intervertebral will be deleted.

*Presented to the 44th Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greenville, S. C., February 23rd-24th.

operation on the basis of clinical findings alone. In my own experience, and no doubt in that of others, there have been fewer negative explorations since adopting this plan of procedure. The reason for this is obvious. Before, we were operating on defects often not due to a surgical lesion, and overlooking real lesions which in the lipiodol column gave little or no indication of their presence. Now, except in atypical cases, the patient is operated on at the level indicated by clinical findings.

The history and neurologic examination give sufficient information on which to make a diagnosis of a disk lesion at L_4* or L_5*, where 95 per cent of all disk lesions occur, in at least 90 per cent of the cases; and in more than half of these the exact level can be determined. This latter information is desirable in that it makes it possible to limit the exposure to one interspace, although not extremely important because both L_4 and L_5 interspaces can be explored through the same surgical field by lengthening the incision slightly.

Favorable reaction to this new conception of low-back pain and sciatica is reflected in the extensive literature on the subject. Upon reviewing this work, however, it is surprising how little has been said about atypical manifestations of disk lesions, and this unfortunately has been responsible for the failure of many patients to obtain relief of their symptoms. It seems timely, therefore, that the importance of this group of cases be stressed. For this reason the cases to be reported, with the exception of Case 1, have been selected to illustrate some of the more unusual diagnostic problems and the various pathologic conditions involved.

Case 1.—A white man, aged 34, was admitted to the University of Virginia Hospital on December 2nd, 1941, complaining of "sciatica." The present illness began a month before admission when the patient twisted his back as the result of a fall. Shortly thereafter, he experienced a dull pain in the lower lumbar region which disappeared within two or three days. Ten days before admission the low-back pain returned and became very intense. Five days later the patient noticed, for the first time, pain in the right hip radiating down the posterior aspect of the thigh and into the calf muscles. This pain was so severe that he had to go to bed and remain on his left side with the affected leg flexed in order to obtain any degree of comfort. Standing, coughing, or sneezing accentuated the pain. Two days before admission a sensation of numbness developed over the outer aspect of the right foot.

It was evident that the patient was in acute distress. He sat on the edge of the chair with the affected leg flexed. There was marked spasm of the lumbosacral muscles, particularly on the right side; limitation of motion in the lumbar spine; tenderness to pressure over the spinous process of the fifth lumbar vertebra; and accentuation of pain with jugular compression (Viets' test).[5] The neurologic findings in the right lower extremity were marked limitation of straight leg-raising with accentuation of leg pain on dorsoflexion of the foot (Lasègue sign); inactive ankle jerk; and hypesthesia over the outer surface of the foot. Except for showing a minor degree of lipping about the body of the second lumbar vertebra, röentgen examination of the lumbosacral spine was negative.

The history and findings in this case were characteristic of a posterolateral herniation of the nucleus pulposus (fig. 1b) at the lumbosacral junction on the right side.

Under spinal anesthesia, an 8-cm., vertical incision was centered over the spinous process of the fifth lumbar vertebra. The lumbosacral muscles were dissected from the right side of the spine to expose the lumbosacral junction. The inferior rim of the lamina of L_5 was removed and the ligamentum flavum excised. It was immediately evident that the first sacral nerve root was under tension and displaced posteriorly. The nerve root was retracted medially, and the dome of the herniated nucleus pulposus was brought into view (fig. 2). This was incised radially, following which there was spontaneous extrusion of nuclear material. After removing the remaining pieces of detached nucleus pulposus, a gaping hole was seen opening into the intervertebral space between the fifth lumbar vertebra and the first sacral segment. Removal of the herniated portion of the nucleus pulposus relieved tension on the nerve root and allowed it to fall back into its normal position.

The patient was immediately relieved of sciatic pain, and his convalescence was uneventful. He was discharged from the hospital on the fourteenth postoperative day and allowed to resume his work as laboratory technician 2½ weeks later.

Comment

The history and neurologic findings in this case were typical of a posterolateral herniation of the nucleus pulposus at the lumbosacral junction. There was no need for spinal fluid or lipiodol studies. Regardless of what these examinations might have revealed, exploration was justified on the basis of the history and neurologic findings alone. If the herniation had been at L_4, the history might have been the same; but, as in the majority of cases with lesions at this level (L_4), the sensory disturbance would have been found on the dorsum of the foot* and the ankle jerk would have been unaffected.

Case 2.—A colored woman, aged 37, was admitted to the University Hospital on December 29th, 1941, complaining of low-back pain and pain radiating down both extremities. She stated that she was well in this respect until March 21st, 1941, when a bus in which she was riding stopped suddenly causing her to fall in a sitting position. This was followed immediately by severe low-back pain and pain radiating into both legs. The patient received first-aid treatment nearby, and on the following day she complained of abdominal cramps which may have been due to uterine contractions since she was four months pregnant at that time.

Three days after the accident the low-back pain and leg pains were so severe that the patient found it difficult to move. She remained at home for three weeks, then was transferred to a hospital where she stayed until September 5th. Roentgenograms were made, but the results of this examination were unknown to the patient. On August 13th she was delivered of a normal baby, but the low-back pain and the bilateral sciatica continued without change during this period.

*L_4 refers to the space between the fourth and fifth lumbar vertebrae. L_5 refers to the space between the fifth lumbar and first sacral segment. For clarity, L_4 and L_5 are used to indicate the 4th and 5th lumbar vertebrae.

*Disk lesions at L_4 affect the fifth lumbar nerve root; at L_5 affect the first sacral nerve.

The pain in the back was limited to the lower lumbar region, and in the lower extremities it followed the course of the sciatic nerves. The pain was made worse on standing; also it was accentuated by coughing and sneezing.

The neurologic examination disclosed tenderness to pressure over the spinous processes of the fourth and fifth lumbar vertebrae; moderate limitation of straight leg-raising and Laségue sign, bilaterally; positive jugular compression test; and questionable impairment of sensation over the dorsal and lateral surfaces of both feet in the distribution of the fifth lumbar and first sacral nerve roots. Then tendon reflexes in the lower extremities were equal and normally active, and the spinal fluid protein was within normal limits, the reading being 30 mg. per cent. Röntgen examination of the dorsal and lumbar spine was reported negative by Dr. Vincent Archer.

While the history in this case was very suggestive of an injury to one of the lumbar disks, the absence of more definite localizing signs prompted the use of lipiodol myelography which on two occasions failed to reveal a significant defect.

There was a compensation factor to be considered in this case; however, we were impressed with the sincerity of the patient's complaints and suggested, therefore, that she submit to an exploratory operation.

Hemilaminectomy of L_5 and removal of the inferior rim of L_4 gave access to both the fourth and fifth lumbar interspaces, and at L_4 posterior protrusion of the intervertebral disc was found (fig. 1d). This presented in the spinal canal as a smooth convex mass and was exerting slight pressure against the fifth lumbar nerve root at its emergence from the dural sac. Palpation of the mass with forceps gave a distinct impression of fluctuancy. It was assumed that the same condition existed on the other side since the patient had had bilateral pain. After large veins in the field had been coagulated and sufficient exposure obtained, an incision was made through the intact annulus fibrosus and enlarged so as to admit a small nasal punch. After removing small pieces of the nucleus pulposus, a forceps was inserted into the center of the disk which brought about a release of watery fluid containing degenerated particles of nucleus pulposus. Following this, the disk collapsed and retracted from the nerve root.

The patient had immediate relief of sciatic pain, and her postoperative convalescence was uneventful. She was discharged from the hospital on the eighteenth postoperative day.

Comment

The history in this case could hardly be explained on a basis of anything other than injury to a lumbar disk, but in the absence of localizing signs and with normal myelograms, the case was of unusual interest to us.

The nuclelus pulposus had not ruptured through the annulus fibrosus, and the posterior protrusion appeared to be caused by pressure from within the central part of the disk due, as it was, to an accumulation of free fluid and degenerated nuclear material. This was a degenerated disk and presumably the same lesion as the "concealed disk" recently described by Dandy[6].

The fact that regressive and degenerative changes are frequently found in disks has been stressed by Saunders and Inman[7] who stated that "posterior herniations are in the great majority of instances evidence of general disk degeneration." This is a very logical conclusion because it offers an explanation for the onset of symptoms in the larger group of patients; *i.e.*, those giving a history of little or no injury. It is difficult, if not impossible, to understand why a normal disk should give way under circumstances related by most patients.

Perhaps an explanation for some of the well-known spontaneous cures may be found in a study of the soft, protruding, degenerated disk. It seems likely that absorption or escape of free fluid from cavities in the disk might take place, thereby resulting in sufficient retraction of the annulus fibrosus to relieve pressure against affected spinal nerve roots. I well recall a patient completely disabled and presenting every indication of a central herniation of the nucleus pulposus who had immediate and lasting relief of symptoms following lumbar puncture at the site of the suspected lesion. At the time no explanation could be offered for this unusual occurrence, but now it seems likely that the needle may have entered a pocket of free fluid in the affected disk creating a fistula through which disk fluid drained into the subdural or subarachnoid space.

Case 3.—A woman, aged 21, was admitted to the University Hospital on January 20th, 1942. She dated the onset of her present illness to two years before admission when she fell while stooping over to fix her shoes and experienced a sensation of something "giving way" in her back and severe pain in the lower lumbar region. She could not straighten up momentarily, but within twenty minutes the pain had ceased. Recurring attacks of low backache followed and within a year pains began to radiate down the anterolateral aspect of both thighs and occasionally into the calf muscles and dorsum of the feet. Following this, the leg and low-back pains became continuous and increasingly severe.

There was no history of pain on coughing and sneezing and no sensation of numbness nor tingling in either foot. The patient stated that she was more comfortable when moving about, and that her discomforts increased whenever she lay down or stood for any length of time.

Three years before admission the patient fell from a tree and injured her left foot. Although this was a rather severe fall, there was no definite connection between the injury and the onset of the present illness.

Examination disclosed obliteration of the normal lumbar curve, slight limitation of straight leg raising bilaterally, tenderness to pressure over the spinous processes of the fourth and fifth lumbar vertebrae; and questionable hypesthesia over the outer aspect of both feet.

In many respects the history was strongly suggestive of a disk lesion, but the radiation of pain into the anterolateral aspect of the thighs was considered unusual for a lesion at either L_4 or L_5. Therefore, involvement at a higher level or a tumor of the cauda equina was suspected.

The Queckenstedt test was negative and the cerebrospinal fluid protein was only 30 mg. per cent. Because of the unusual features of the case, lipiodol (2 c.c.) myelography was decided upon, and this revealed a transverse defect at L_4, more pronounced on the right side. With this additional information a diagnosis of central protrusion of the disk was made and operation advised.

Exploration was made from the right side, but in order to obtain sufficient exposure it was necessary to remove the spinous process together with the lamina of the fourth lumbar vertebra. Many large veins were encountered in

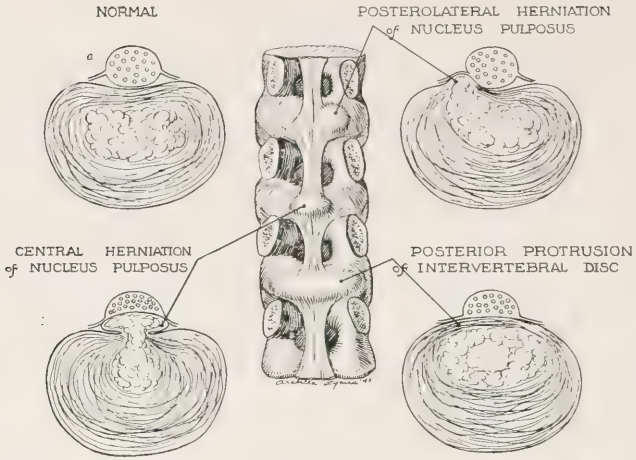


Fig. 1 *a.*—Normal intervertebral disk.
b.—Posterolateral herniation of nucleus pulposus.
c.—Central herniation of nucleus pulposus.
d.—Posterior protrusion of intervertebral disk. In some instances there is actual displacement of the disk. In others, as illustrated, the annulus fibrosus bulges into the spinal canal.



Fig. 2 —Partial hemilaminectomy. The dome of the herniated nucleus pulposus is brought into view by medial retraction of the nerve root.

the extradural space which made the procedure unusually difficult. Finally the moderately tense fifth lumbar nerve root was retracted medially, bringing into view at L_4 the posteriorly displaced annulus fibrosus which had been penetrated but not completely ruptured by the nucleus pulposus. This was incised, and the opening enlarged sufficiently to admit a small nasal punch which was used to bite away that part of the disk which was exerting pressure against the nerve root. A portion of the nucleus pulposus was removed with small biopsy rongeurs, then the protruding rim of the annulus fibrosus was pushed back into its normal position, thus bringing about complete relief of pressure against the affected nerve root.

The postoperative convalescence was uneventful, and the patient was discharged from the hospital on the fourteenth postoperative day free of pain.

Comment

I had examined this patient several months before her admission to the hospital, and at that time the history and neurologic findings were essentially the same as at the last examination; but then, in the absence of more definite neurologic findings and with the history of atypical radiation of pain, I did not feel justified in making a definite diagnosis of a disk lesion.

While the clinical manifestations in this case were similar to those in Case 2, the pathologic process was somewhat different. Here the posterior rim of the annulus fibrosus was actually displaced and partially torn from the vertebral bodies, forming a hard, inelastic ridge producing constant pressure against the fifth lumbar nerve roots, thus accounting for the unremitting nature of the pain.

Case 4.—A white woman, aged 30, was admitted to the University Hospital on December 15th, 1941 complaining of low-back pain together with pain and numbness in both lower extremities. She had had recurring attacks of backache during the past four years, but these had always been relieved by strapping her back well with adhesive tape. The last and most severe attack occurred on November 12th, 1941, and persisted for two weeks. She continued to work for one week, then was forced to go to bed. A week later the backache became less intense, but at this time she became aware of numbness in the left leg from the hip down. Later this subsided except in the foot where it remained unchanged. The patient stated that being on her feet accentuated her symptoms.

The neurologic examination was negative except for hypesthesia over the entire left lower extremity, absence of left ankle jerk, and Babinski sign on the same side.

Lumbar puncture revealed clear and colorless fluid under normal pressure. The Queckenstedt test was negative. The first and second specimens of spinal fluid showed 100 and 120 mg. per cent of protein, respectively.

The neurologic findings in this case were suggestive of an intraspinal mass lesion at the level of the twelfth dorsal or first lumbar vertebra, but in view of the confusing neurologic picture and in the absence of a spinal subarachnoid block and also because the patient seemed to be improving, she was discharged from the hospital for further observation.

Second Admission: Failing to improve the patient reentered the hospital on January 18th, 1942. At this time the neurologic picture was still confusing, but the sensory disturbance while extensive in the left lower extremity appeared to be most pronounced in the distribution of the first sacral nerve root. Stimulation of the plantar surface of the left foot still produced dorsal flexion of the great toe, but since all the typical Babinski phenomena were not present, this finding was discounted for the time being. The left ankle jerk could not be elicited as before; whereas, the one on the right was normally active.

The preponderance of evidence pointed to a lesion at the lumbosacral junction, so we proceeded to explore this region. This was done from the left side, the side of greater pain. After the usual modified hemilaminectomy, it was readily seen that there was present either a large central herniation of the nucleus pulposus or an intradural tumor. A satisfactory extradural approach was not feasible; therefore, the spinous process and part of the right lamina of the fifth lumbar vertebra were removed, and the dura opened. After the roots of the cauda equina had been separated, a large central herniation of the nucleus pulposus was brought into view, and it could be seen that this was exerting pressure against both first sacral nerve roots (fig. 1c). A small vertical incision was made through the dura, posteriorly, over the protruding mass following which a large piece of nucleus pulposus presented in the wound. This was lifted out in one piece, after which the affected nerve roots settled to their normal position.

The patient's convalescence was uneventful, and she was discharged from the hospital on the fourteenth postoperative day free of pain.

Comment

The surgical findings in this case were typically those of rupture of the annulus fibrosus with central herniation of the nucleus pulposus (fig. 1c); however, the neurologic findings were very confusing, and to some extent are still unexplained. Had it not been for the Babinski sign, we might have discounted what appeared to be widespread sensory impairment in the lower extremity and gone ahead with the operation during the patient's first visit to the hospital.

Differential Diagnosis

Spondylolisthesis or spondyloschisis may directly affect the lower spinal nerve roots in such a way as to produce signs and symptoms which often cannot be distinguished clinically from those caused by disk lesions. Especially for this reason, röentgenograms of the lumbosacral spine should always be a routine part of the examination.

Tumors of the cauda equina and malignant disease of the lumbar spine must be included in the differential diagnosis, but these conditions rarely produce typical sciatic pain. Moreover, they involve several nerve roots bilaterally and give rise to progressive disability which usually leads to their recognition.

Surgical Considerations

The operation may be done under local, spinal, or general anesthesia. In suitable cases we prefer local or spinal anesthesia.

The unilateral approach gives sufficient exposure for adequate treatment of most disk lesions. In some few cases, however, especially those in which there is a central herniation of the nucleus pulposus

it is necessary to perform a limited bilateral laminectomy and approach the lesion transdurally.

For the most part the operation is limited to soft tissues. The amount of bone removed is inconsequential and does not weaken the spine. In the routine procedure, only the inferior part of the lamina posterior to the affected disk is removed. When both the fourth and fifth lumbar disks are to be explored, the operation is facilitated by starting from below and removing the lamina of L_5. At times it is also necessary to remove a part of the inferior rim of the lamina of L_4 in order to obtain satisfactory exposure of a lesion presenting between the fourth and fifth lumbar vertebrae. Even this is not an extensive operation insofar as the removal of bone is concerned, and it should in no way interfere with normal functioning of the spine.

Our present policy is to permit the patient to do light work within four to six weeks and to return to regular duties within three months, although in all probabity this is too soon for a laborer to resume his normal activities. Advice along these lines must be individualized. It should be emphasized that it is not the operation that makes these precautions necessary; it is the pathologic disk that requires time for healing.

Results

The results from this work have been uniformly good, but, of course, all patients have not been cured. From my own series of more than two hundred patients operated on during the past five years I cannot as yet give final factual data. Most of these operations have been done within the past eighteen months; therefore, sufficient time has not elapsed for me to speak of cures in this series. It can be said, however, that the vast majority of patients have been cured and that most of those with residual symptoms are more comfortable than before operation. There have been no postoperative deaths nor serious complications in this series of cases.

Why should there be failures when the pathologic process is so clearly defined and apparently subject to correction? There are several factors to be considered.

(1) The operation is not directed toward the correction of the fundamental pathologic process—disruption of the disk—but to the removal of that part of the nucleus pulposus or posterior rim of the disk which is exerting pressure against sensitive nerve roots. Therefore, regardless of how complete the operation may be the patient is left with a pathologic disk which may or may not cause some degree of back pain together with nerve-root pain until the settling-down process has been halted by the ingrowth of strong fibrous tissue to stabilize the false joint. After the removal of a herniated nucleus pulposus, there exists a large empty space between the bodies of the adjacent vertebrae. It has often occurred to me that the insertion of a bone peg into this space might result in a firm union at this point and thus prevent at least some of the later discomforts.

Direct attack on the disk lesion combined with spinal fusion would result in a higher incidence of cures. This should be done when the disk lesion is associated with spondylolisthesis or spondyloschisis; but in uncomplicated cases it does not seem justifiable to subject all patients to spinal fusion, with the prolonged disability that it entails, in order to cover the small percentage of cases which might be additionally benefitted by this operation. Since the removal of a herniated nucleus pulposus is a comparatively simple operation and in itself responsible for only a short period of disability, it seems more logical to reserve spinal fusion for those few cases which later show need of this form of spinal support.

(2) There can be little doubt that the use of lipiodol, while extremely important in the early development of this work, has been responsible for the accentuation and persistence of nerve root pain in many cases. Now that lipiodol is seldom necessary for diagnosis of disk lesions, this factor can be almost eliminated.

(3) Incomplete removal of the nucleus pulposus subsequently followed by further extrusion u doubtedly accounts for the recurrence of sympto in a small percentage of cases. There is some difference of opinion as to whether all of the nucleus pulposus or only the herniated part should be removed at operation. The consensus favors the removal of only the herniated and detached portion. This seems to be the better procedure because in many cases the herniation is of long standing and is pinched off from the main mass of the disk which has already compensated for the extruded portion of the nucleus pulposus. Under such circumstances it would be unwise to do more than remove the detached mass.

(4) Love[8] found multiple herniations in 12 per cent of his cases. We have encountered this condition in only one case, but in others it may have been overlooked, especially in those cases in which pain persisted after what was considered to be a satisfactory removal of one herniated nucleus pulposus. In all but one of our cases the pathologic disk was found at either L_4 or L_5. For this reason and because of the possibility of multiple herniations, we are inclined to explore both of these spaces even though a pathologic lesion is found at the predicted level. It is believed that this, if made a routine procedure, would further reduce the incidence of incomplete cures.

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Discussion

Dr. William Reid Pitts, Charlotte:

I wish to take this opportunity to express my appreciation to Dr. Crutchfield for his very excellent discussion of lesions of the intervertebral disc. The articles on this subject for the most part have dealt with the diagnosis of the typical syndrome of herniated nucleus pulposus. They have stressed the simplicity and the ease with which the diagnosis of these cases can be established. Some have even gone so far as to say that all that is necessary for the diagnosis is a history of injury to the back, pain in the lumbar region and sciatica. The problem is not so simple as this, for many conditions may simulate herniated nucleus pulposus and to be sure as Dr. Crutchfield has pointed out many protrusions of the intervertebral discs produce bizarre, unusual and atypical signs and symptoms. These unusual cases are encountered not infrequently by those of us who are operating on these lesions. In the vernacular of the prophet it is the atypical cases which are sent to try us. Therefore inasmuch as the diagnosis of herniated nucleus pulposus has become almost a daily occurrence, it would seem to me extremely timely for a presentation such as we have just heard by Dr. Crutchfield who stressed the unusual types of lesions of the intervertebral disc. The local pathological process which produces root compression, thereby causing sciatica, is extremely varied. The future developments in relation to these conditions are to come primarily from an accurate observation and description of the exact pathology encountered at the time of operation.

It has been pointed out many times that more than 90 per cent of the herniations of the nucleus pulposus occur at L 4 and L 5 and it has been stated by some that lesions at L 5 can be differentiated from lesions at L 4 merely by the presumption that lesion at L 5 produces changes in the ankle jerk. In my experience this has not been a clear-cut differentiating point. Paresthesias and sensory changes have been of far more value in localization than presence or absence of the ankle jerk. Sensory changes over the heel and the lateral aspect of the foot point to the lumbosacral region; while pain, paresthesias, or sensory disturbances involving the dorsum of the foot and region of the great toe point to the implication of the 4th lumber interspace. Recently many observers have indicted the use of spinal subarachnoid lipiodol as a diagnostic procedure because it is not absorbed, is a mild irritant, and sometimes produces a reaction. The use of lipiodol has been discontinued for the most part in typical cases in which localization can be made on the history and physical signs. There are, however, atypical cases in which the history and findings are inconclusive and lipiodol is necessary to localize the lesion. Particularly is this true in cases where a lesion is suspected in the upper lumbar region. In those cases in which lipiodol is used we now inject the lipiodol while the patient is on the fluoroscopic table, leaving the needle in situ during the fluoroscopy, and at the end of the procedure aspirate the lipiodol after it has been puddled at the tip of the lumbar puncture needle under fluoroscopic control. This procedure has been advocated by Kubic and Hampton of Boston and has the following advantages: First, a more complete aspiration of the lipiodol can be effected than by washing out at the time of the operation; second, removal of the lipiodol is desirable at the earliest possible time due to the chance of reaction; third, it obviates the necessity of opening the dura at the time of operation which is of particularly great value in cases in which the nucleus has herniated laterally and can be removed extradurally. Even in cases requiring opening of the dura previous aspiration of the lipiodol shortens the operative procedure and therefore the anesthetic time by 15 minutes. Therefore it is my custom to aspirate the lipiodol immediately following the fluoroscopy in those cases

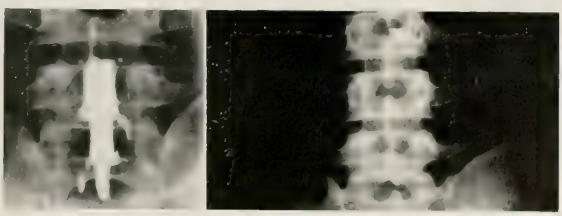


Figure 1.—4 c.c. of lipiodol has been injected into the lumbar thecal sac. The needle has been left in situ and its hub is visible at the extreme top just to the right of the midline. No filling defect was noted at L_4 or L_5.

Figure 2.—This is an x-ray of the same spine as shown in Figure 1. The lipiodol has been aspirated through the needle which is still in situ and is visible at L_3.

which do not show defects as well as in those that are to come to operation at a later date.

In order to demonstrate the use of lipiodol and the completeness with which it can be aspirated from the lumbar thecal sac, I wish to review briefly my most recent experience with an atypical case of sciatica.

A 31-year-old man, while lifting in a stooped position 4 months ago, felt a pull in his back and began to have pain and soreness over the lumbar region. One week later he developed pain in his right calf and popliteal region. Soon the pain involved the heel and the lateral aspect of the right angle. The pain was described as a throbbing and a feeling as if the leg was swollen. It was aggravated by walking and exercise. Sneezing, coughing and straining caused radicular pain over the above-quoted distribution. The pain had been present for four months and had not been relieved by conservative therapy. The positive physical findings were:—2 cm. of atrophy of the right calf and questionable diminution of right ankle jerk; neither LeSague's nor Naffziger's sign was present and there was no tenderness over the lumbar spine; no sensory changes were demonstrable. Lipiodol was injected into the lumbar thecal sac which did not reveal any filling defects. (Fig. 1.) Immediately following the fluoroscopy the lipiodol was aspirated. (Fig. 2.) You will see that very little lipiodol remains in the lumbar thecal sac and I might add that this is by far a more complete removal than I have ever been able to obtain by attempting to wash out the lipiodol at the time of operation. Although this patient had a rather classical history for a herniated nucleus pulposus, there was a paucity of physical findings which prompted me to use lipiodol. It is to be remembered that herniation of a nucleus pulposus in an extreme lateral position, particularly at L 5, may exist without impinging on the lumbar thecal sac. Therefore, even though the lipiodol studies are negative in this particular case, I believe an exploration of the low lumbar region would be advisable if his symptoms remain unabated.

Again May I congratulate Dr. Crutchfield on his excellent presentation and I would like to sound a note of warning to those who are conducting operations for these lesions of intervertebral discs to observe, describe and study the exact local pathology encountered in order that it might be correlated with the clinical findings. The advancement to be made in lesions of the intervertebral disc is in the field of pathology.

DR. CRUTCHFIELD, (closing):

I want to congratulate Doctor Pitts on being able to remove lipiodol so completely with a needle. This seems better than removing it during the operation because opening the dura almost always causes troublesome bleeding from veins in the extradural space.

In reply to Doctor Kredel, I do not know how long these patients should be kept inactive. As stated before, our present policy is to keep them in bed for twelve days and to let them leave the hospital on the fourteenth postoperative day. Light work is permitted within four to six weeks, but all patients are cautioned against heavy work for at least three months.

Usually, following operation, there is immediate relief of sciatic pain. Then within twenty-four to forty-eight hours it returns in a modified form, probably due to edema of the affected nerve caused by retraction of the nerve at the time of operation. Persistent pain may be due to a disk lesion at another level. We know that multiple herniations do occur. Return of symptoms after a period of relief suggests the probability of further extrusion of nuclear material. I am convinced that our results will not be as good as we would like until something is done to stabilize the false intervertebral joint.

In answer to Doctor Hall's question, I believe the pain, in most instances, is due to mechanical causes.

TREATING THE FAMILY OF THE MALARIA PATIENT

(B. H. Booth, Drew, in *Miss. Doctor*, May)

In July, 1937, a survey was carried out on the workers of a large plantation. Six hundred persons of all ages were examined; 50 showed malarial parasites in the blood and these were given atabrine, three 0.1-Gm. tablets daily for five days; then three tablets on one day of each week for the next eight weeks. Children under 10 received half these dosages. None of these 50 persons showed any clinical symptoms of malaria during the subsequent season.

Among the 550 persons who presented negative smears and received no treatment, 115 cases of tertian malaria developed.

In the group presenting initial positive smears there were 17 new cases in 10 families. Among the 115 clinical cases 15 families had 2 cases each, 11 families had 3 cases each, three families had 4 cases each and one family had 6 cases. Thus, in 98 cases of malaria there was infection in other members of the family.

In May, 1938, blood smears of 450 patients were examined; 27 of these were positive, an increase of 6%. Of the 27 patients one left the locality before treatment was instituted; 18 of the remaining 26 took the same treatment as was given the year before and, in addition, all members of their families received three 0.1-Gm. tablets of atabrine on one day of each week for eight weeks. None of the 18 persons receiving a therapeutic course of atabrine developed clinical malaria, nor did any members of their families acquire the disease. The eight remaining patients with positive smears and their families served as controls. Four of the eight positives developed malaria during the ensuing season; two other cases occurred in the family of one of these patients.

Among the 423 persons with negative smears at the beginning of the investigation, 28 subsequently developed malaria. Thus, the total of positive cases was raised to 55.

The author has concluded that malaria tends to occur in families in which the disease has already appeared. The occurrence of secondary cases in the family may be prevented by adequate treatment of the primary cases and by the administration of a prophylactic course of atabrine for eight weeks to the other members of the family.

HISTAMINASE IN PREVENTING IVY DERMATITIS

John Moss, Durham, in *North Carolina Med. J.*, May)

A group of 35 campers was observed for a period of twenty-five days. Nine had dermatitis the previous summer. These 9 were each given 45 units of histaminase by mouth daily for the twenty-five day period. The remaining 26 did not receive the drug. One receiving histaminase developed diarrhea 24 hours after administration of the first dose and was excluded from the study.

Of the 8 taking histaminase, only one developed dermatitis over an area of 2 cm. on the knee. Among the 26 not receiving the drug there were 13 individual cases of ivy dermatitis during the 25 day period. For the most part they were mild and the dermatitis was restricted to one area, but in several cases the lesions were extensive. All campers were dressed in shorts and athletic shirts, and the possibility of exposure to the plant was, in general, the same for all.

HYPERPARATHYROIDISM.—In the past 10 years, 67 cases have been seen at the Massachusetts General Hospital. Bear it in mind.

Removal of Ureteral Calculi By Traction*

Roy P. Finney, M.D., Spartanburg, South Carolina

NONE OF US needs to be told that calculi impacted in the pelvic segment of the ureter constitute a dangerous condition, that the condition may present to the physician a perplexing problem, nor that breaking up the impaction and consequent downward movement of the stone causes the patient severe pain. As a rule these curious formations should be removed as quickly as possible, as the best means of preventing certain painful and dangerous complications and/or sequelae.

The trouble to be encountered in removing a stone from the ureter is much greater in one case than in another apparently identical in its practical points. A small stone may require open operation, while another much larger may come away easily after slight manipulation. This difference of behavior is consequent on differences of the affected ureters in the two cases. The tube which conveys urine from kidney to bladder is too small, too fragile and too keenly sensitive to reflex stimuli. These faults, with some others, make attempts at removal of a stone by manipulation difficult and uncertain of success.

Dr. Hugh Hampton Young, a distinguished invited guest of this meeting, was first to discover that by poking and prodding with instruments of various sorts a ureteral calculus may be made to pass. His first success with this method came in 1902, and this method of removing urinary stones is now one of the most important of the means of utilization of the, at that time, newly-invented catheterizing cystoscope.

Now, after forty years, the physician may select from a large number of ingenious instruments nnd an array of vastly improved cystoscopes for getting at the stone, stretching, poking and prodding—all in the name of manipulation.

Manipulation in this part of the anatomy is a procedure as to which those making use of it differ considerably in technic and estimate of its worth. C. B. Squires, reporting on the treatment of 606 patients at the Crowell Clinic (1915 to 1930) said: "Manipulation was successful on 528 patients. Only 44 required open operation." Fowler and Champion have succeeded well with manipulation, relieving 76 per cent of their office patients afflicted with ureteral stone—and their patients usually continued work throughout treatment. Their instruments of choice were catheters and the spiral dislodger.

On the other side is Higgins' review of 350 cases of ureteral calculi in which treatment was given at the Cleveland Clinic. Manipulation failed or was not attempted in 228 cases. However, in order to properly understand the figures one must be acquainted with Higgins' extraordinary success in open operation. In 228 cases of urterolithotomy he and his colleagues had a mortality of less than 1 per cent. Such results would make any of us partial to open operation, and disposed to give it preference in any doubtful case.

Manipulation permits the greatest freedom in technic; the operator may improvise to his heart's content. Everyone who has made much use of the cystoscope has wished for an instrument with which he might safely grasp a calculus and pull it out of the ureter without more ado. Grasping and pulling is the primitive, the satisfying way of getting at any object we wish to extricate from a difficult position, and many ingenious types of forceps have been devised for extracting ureteral stone by traction. However, the difficulties have been so many and so baffling that no entirely dependable model has yet been constructed.

These difficulties I outlined in a report pubblished in the *Journal of the American Medical Association's* issue for

1. A strong forceps must be rugged in construction, with strong serrated jaws; yet it must be small and have a semiflexible shaft.

2. Since the forceps must grasp the stone blindly, some provision has to be made to prevent inclusion of the mucosa of the ureter.

3. Granted that these difficulties are solved, a discouraging fact remains: Only calculi of very small size may be pulled through the ureter; one of .22-inch caliber pulled out at one manipulation will likely strip the ureter of much mucosa. An operator with more zeal than care may tear the ureter apart.

These observations are not original with me; but I did confirm them some years ago. While engaged in a piece of research, I became more and more skeptical about the use of a forceps in so delicate a structure as the ureter. Pursuing the quest further I became convinced that I had proved

*Read at the forty-fourth annual meeting of the Tri-State Medical Association of the Carolinas and Virginia, Poinsett Hotel, Greenville, South Carolina, February 23d-24th.

it to be impossible to pull a calculus out of the ureter with a forceps. Of course when the stone is engaged in the meatus and is visible one may deliver it with a forceps; but it is better to do a meatotomy instead.

A sketchy description of my experiments, performed mostly on large dogs properly anesthetized is as follows:

Having exposed and opened the ureters, I implanted calculi of varying sizes and shapes and attempted to grasp them in forceps inserted up through the bladder. Using every type of grasping instrument that the ureter would receive, it was next to impossible to get a firm hold on any one of the stones. The few successes invariably included a bit of mucosa in the bite. Next, by using one hand to steady the ureter and to manipulate the stone which it contained, I was able to get a firm hold on the calculus without including the wall of the ureter. My object was to settle the question of whether a stone cleanly grasped by a forceps may be pulled out of the ureter. The answer, as I obtained it, is no. Only the tiniest calculi would come along under reasonable traction, and then with the production of serious trauma. Before the stones of medium size and larger could be removed the ureter would tear.

A suitable small scale interposed between my hand and the forceps enabled me to determine in pounds how much pull the ureter would take without tearing. All ureters withstood 5 pounds (2.3 Kg.), but none endured a pull of 10 pounds (4.5 Kg.).

Trauma was severe in every case and varied from different degrees of stripping off of the mucosal layer to complete divulsion of the ureter.

Having rejected the use of forceps as unsound, I turned to an idea which had occurred to me several years before but which had not been put to the test. It was to loop a ureteral catheter around the stone and use it as a medium for traction.

Several objections to this procedure were recognized. First, was it possible to lasso a foreign body wedged in so small a canal as the ureter? Second, what if success is so complete that having engaged the stone one finds it refusing to budge in any direction? Third, what of the trauma just described? Could it be avoided.

Happily, none of these objections proved serious. The difficulty of lassoing a stone in the ureter is not great; of 50 cases not one was encountered of a calculus fixed so firmly in the ureter that it could not be dislodged, and in no instance was enough mucosa stripped from the ureter to delay recovery.

Mastery of the technic requires no great expenditure of time no excess of native manipulative skill. In all but 5 of the 50 cases the stone was removed with this kind of home-made instrument: Into the distal end of a No. 6 F. x-ray catheter, with either a whistle tip or a taper tip, was inserted a silk suture, care being taken to tie the knot as small as possible. A wire stilet inserted to stiffen the catheter makes it ready for use. The catheter with thread attached is passed transvesically to the stone, beyond it if possible. In case of refusal to pass, a local anesthetic is injected and afterward a few drops of liquid petrolatum for lubrication. With rare exceptions, the catheter will then pass with little difficulty.

Though you exercise the greatest patience and care and make use of the Blasucci tip, now and then you will fail. Then spinal anesthesia, by affording relief from spasm and pain, will enable you to pass the instrument beyond the stone in most of these difficult cases. In only one of 50 cases was I unable to pass the stone.

Having succeeded thus far, the next step is to move the thread-bearing catheter on until the renal pelvis is reached. At this point the stilet is withdrawn a few inches and the cystoscope removed, the catheter being left in place. By pushing toward the kidney with the catheter and pulling away from it with the suture one may make a loop without difficulty or injury. There is plenty of room in the dilated renal pelvis. Once the loop has been made, thread and catheter are pulled down the ureter together until the stone is engaged in the loop. No doubt is experienced as to when this occurs, since firm resistance is encountered.

One is now in position to put traction on the stone, without fear that the loop will slip. For other reasons, it is best not to use more pull than 1 or 2 pounds (0.5 or 0.9 Kg.). However great the temptation, one must never undertake to remove the stone immediately. A small spring scale is attached to the end of the catheter, the patient is put to bed and pain is relieved by means of an opiate. The nurse is instructed to exert a pull of 2 pounds (0.9 Kg.) on the scale, maintaining it for a moment, every hour or two for twenty-four hours. At the end of that time the patient is given a bit of gas and a pull up to 5 pounds (2.3 Kg.) is made by the physician.

In my series of 50 cases the stone was obtained at the end of twenty-four hours in 47. Treatment was continued in the 3 cases of refractory calculi, being successful in 2, in which the stone was passed in thirty-four and forty-two hours respectively. The treatment in the third case was failure. Having kept the loop in place for seventy-two hours without budging the calculus, I removed it by open operation. Failure was due to the unfavorable relationship of the greatest diameter of the stone to

the lumen of the ureter and to the fact that it was embedded in the wall of the ureter.

Summary

A new method of extracting ureteral calculi by means of traction is offered as superior to methods now in use in the following respects: a) A firm grasp on the stone may be had without including mucosa. b) Only one cystoscopic treatment is necessary. c) It is practically free from danger, provided the simple technique is followed with ordinary care.

Discussion

Dr. O. T. Finklea, Florence:

I don't think any of us who have been attempting to do urology over any period of time will offer any objection to any method that gets the stone out of the ureter. The matter of urinary calculi has been a bugbear to all of us. The fact that there is nothing that has been very successful in all cases is demonstrated by the multiplicity of opinion of urologists for a number of years past.

The Doctor has done some very nice work and is to be congratulated on what he has devised and brought forth himself. There are a few things I would like to say in discussing this paper that I think should be borne in mind. First, one must be particular about hanging or catching instruments in the ureter. I don't know anything that makes one feel worse than to pull down and find you have got back only part of your instrument. All of us who have done urology any length of time have probably had the same experience. I have an expression, "It is hell to tell the captain." When I do that, it's hell to tell the captain, because you have got to do something about it.

Another thing I'd like to mention is this—in my experience extraction of stones from the ureter is very hazardous unless you have good dilatation of the ureter below the stone. If you don't have dilatation there, you are inviting trouble and you are going to have it, too, if you stay with it. If you get definite dilatation, it is not a very hazardous job to extract a stone from the ureter, whether by the loop method or by dilatations or manipulations. In removing these stones, of course, there is always an element of chance. When a stone is down in the ureter, though for a short time only, we don't know exactly the condition of that ureter above, below or adjacent to the stone. We don't know how much inflammation has been set up in the ureter. At time ulceration may have occurred and very often these ureters can be punctured very easily, or the ureter will pull in two. I have quit using any pull on any instrument to get a stone out of the ureter. I have been one of those unfortunate enough to have a ureter pull apart and of course after that happens to you, naturally you are shy. Not knowing the exact condition of the ureter, I am rather skeptical to try pressure because if the ureter is diseased it will rupture much quicker than the normal ureter.

I would like to say a word about ureterotomy vs. manipulation. I don't think any of us can set down a definite table as to the size of stone that can be removed by ureteral manipulation, and those stones that should be removed by ureterotomy. All of us have seen stones that we never thought could pass, pass, and seen stones that we didn't see why they wouldn't, not pass. I have come to the conclusion that there is no such thing as "always will" or "never will". I have been convinced of the fact that there are always exceptions to the rule in medicine, regardless of what you are trying to do. The extraction of these stones is sometimes more hazardous and much more trouble than doing a ureterotomy. My experience has been that if a stone has been in the ureter for a long time and there is dilatation of the ureter above the stone with a fairly definite fibrosis or constriction of the ureter below the stone. I don't think there is much need to try to manipulate very long, because fibrosis in the ureter won't "give" anyway. It is much more economical and much more satisfactory both to the physician and the patient to go ahead and do a ureterotomy and remove the stone. The patient will get back on his feet just as quickly.

Another thing I'd like to stress is this—those patients with infections above the stone in the kidney pelvis don't stand manipulation very well. Quite often you are troubled with the fact that as soon as you dilate the ureter, the patient will have a chill and fever. There is obstruction in the ureter and it isn't long before there is a noticeable amount of injury done to the kidney. The object in treating all of these things is to try to preserve as much renal tissue as possible.

The loop method which the Doctor has suggested in my hands has not been more successful than other methods. The one we employ most is gradual dilatation with a larger catheter I think Dr. A. J. Crowell first did that years ago, gradually dilating the ureter up to the size which will permit the stone to pass. The dilatation, I think, is very essential, regardless of what you use.

I'd like to sound a little word of warning in making the loop, especially in this day when the catheters we have to put up with are almost like steel bars and it is quite often necessary to soak them in hot water to get them soft enough to pass up the ureter. In making the loop, be cautious. The catheter is very rigid and very often it will go through the ureter and/or diseased kidney pelvis very easily. When you are doing that, be careful because due care quite often saves embarrassment.

I would like to ask the Doctor if he paid very much atention to the amount of dilatation in the ureter below the stone; also, how to prevent the loop from riding over or under the stone. My experience has been that it either didn't engage the loop or went over or under the loop and the loop would pull out. Probably I laid too much stress on the amount of dilatation and therefore the stone had more play to get over the loop.

Dr. Finney, (closing discussion):

I appreciate the discussion very much indeed. All of us are in agreement with the idea of being gentle and being careful. However, I don't believe that we have need to be so afraid of manipulation. It is something every urologist does. Except in unusual cases where the stone is obviously too large, I should think none of us would be performing his duty if he didn't try manipulation of some kind. The problem is to do the type of manipulation promising most of good and least of evil .

Now, as far as pulling the ureter in two is concerned, of course that is possible if you rear back on something that you have tied to a stone and you pull it in two, but the idea is not that. I found in dogs and the human cadaver that it requires something over five pounds to pull the normal ureter in two. In this manipulation I have never gone anywhere near five pounds. I have a scale hitched to the end of the catheter to know how much pull I am giving and I never exceed two pounds except in rare cases when I feel absolutely justified in doing so. Then never more than three. I doubt very seriously if the risk of rupturing the ureter is very great. I have been doing urology to some extent all through my whole professional life, which is about twenty years, and I have never seen a ureter with a stone torn in two or otherwise severed except in the course of hysterectomy.

As far as the ureterotomy is concerned, opening the patient up and removing the stone—well, now, that sounds very, very nice and no doubt a great many cases would do all right. I don't know how many of you gentlemen

have done ureterotomy for a stone when the stone was where it usually is, down in the pelvis as far as it can get, but you strip the peritoneum away and work in a hole so deep you can hardly see the bottom. I have seen excellent surgeon struggle for an hour in a case of that kind. At the same time you are preparing to rupture it with a knife, cut a hole to take the stone out. You are going to have drainage. You are depending on drainage to take care of danger. Of course now you can use a sulfonamide.

To the manipulation itself I think there is no objection at all. There is a great deal of difference between ureterotomy and a two- or three-weeks' stay in the hospital and a considerable mortality rate on the one hand, and having one of these stones drawn out almost without trauma, and having your patient get off the table and go home and go to work.

When I sent my material in to the American Medical Association, I didn't know whether they would take it or not. They wrote back promptly and said they had submitted it to Dr. Vincent O'Connor, New Orleans, Chairman of the Section on Urology. He wrote me to send him the gadget and let him see what it was. Obviously, there are a great many ureteral instruments and unless there was some decided improvement, there would be no reason for reading a paper of that sort. Several weeks went by and I had a letter from Dr. O'Connor and he said he found the instrument satisfactory and I would be given a place on the program and I have at least eight or ten letters from urologists who have used the method and have found it good. Of course, I don't think it is perfect by any means.

As regards dilatation below the stone, yes, I do do that, Doctor. I run the dilatation up to a No. 10 catheter in most all cases at that sitting. A peculiar thing about a ureter—when it is obstructed, it not only dilates above but for some strange reason, it also dilates below. That is a very familiar phenomenon. Why, we don't know.

I am pretty certain that nobody is apt to get in serious trouble with this instrument. It is not metal and unless one is rather rough it would be difficult to injure a ureter.

The last stone that I took out, which was four days ago, it slipped twice. The man was sent to me for a prostatic resection and he needed a complete resection; but, in addition, he had a stone in the ureter which he didn't know was there, which I discovered accidentally by taking an x-ray picture before putting him in the hospital for resection. I put a loop on the stone and, by the way, there is something to what has been said in regard to American-made catheters—some of them are terrible, some of them are not so bad; we just don't know how to make catheters over here. I had one of these darned stiff affairs. I boiled it and got some amount of limberness and in addition to that I injected water into the kidney pelvis at 109° and that softened the end so that I could make the loop; but it slipped off twice and that is the only time that I ever had this to happen unless I failed to get a loop formed satisfactorily. Once or twice I had to make, at the same sitting, a couple of attempts to get the proper type of loop and to get it engaged properly. It doesn't slip off often. If it would slip off often, I think that could be overcome by inserting another catheter and by taking up the slack in the side of the ureter at that point.

SURGICAL PROCEDURES ON PATIENTS OF ADVANCED AGE

(L. E. Wilcox & O. F. Clagett, Rochester, in *Proc. Staff Meet. Mayo Clinic*, Dec. 10th)

A review of the records of 1,204 patients 65 years of age or older who had one or more major operations performed at the Mayo Clinic during 1939 and 1940—all patients subjected to surgical procedures of a major character performed by the general surgeons during this period, 1364 operations with a mortality rate of 9%. There were 43 emergency operations with 37% mortality. Elective operation for benign disease—649, mort. of 7%; 409 cases of operable malignant disease, with a mortality of 8%; 241 palliative operations for malignancy with a 16% mortality.

The deaths that followed operations on the gallbladder and bile ducts were all of patients who had long-standing disease of the gallbladder and in almost every instance there was jaundice or extensive hepatic or pancreatic disease resulting from the disease of the gallbladder. The only deaths that occurred subsequent to operations on the thyroid gland were in cases of adenomatous goiter with hyperthyroidism which had produced hepatic and cardiac damage. The only deaths following operations for hernia were after operation performed as an emergency measure for incarceration or strangulation. The results in this group emphasized the importance of urging operation for benign surgical disease before extensive disease or a condition of emergency makes operation necessary under conditions not favorable to the patient.

CONSERVATION OF DEALERS' STOCKS OF MEDICAL AND SURGICAL SUPPLIES

The following statement from the Office of Civilian Defense, Washington:

The medical profession and the hospitals of the nation will shortly be obliged to depend upon dealers' stocks of medical and hospital supplies it they are to maintain their present level of efficiency. The continued shortage of raw materials makes it increasingly evident that even the armed forces may have difficulty in obtaining their requirements. Stocks on the shelves of the dealers of this nation constitute the only reserve of medical and hospital equipment which may be available in the near future to meet civilian needs. The hoarding and dead storage of equipment and supplies for a possible emergency should, therefore, be discouraged. Any unexpected emergency could be met by our present civilian medical and hospital resources; continued disaster could only be met by the utilization of military stores which would be made available if there were urgent need.

Any surplus or obsolete equipment now in the possession of physicians and hospitals ought not to be dispersed at this time, because of the difficulty of replacement and the possibility that it may be needed for the establishment of emergency base hospitals.

TREATMENT OF MALARIA

(O. W. Bethea, New Orleans, in *New Orleans Med. & Surg. Jl.*, April)

Specific therapy in this country is largely confined to two routine procedures: 1) Quinine, 10 grains t. i. d. for three days—longer if necessary to render free of plasmodia; 2) Atabrine, 1½ grs. t. i. d. for five days. Recently there has developed a tendency to supplement both of these with a course of plasmochin.

Quinine acts slowly upon the gametocytes of all species of plasmodia and atabrine has limited effect upon the gametocytes of the *P. falciparum*... Plasmochin will destroy the gametocytes of all the plasmodia. It is customary to give 1/6 gr. two or three times daily for five days, during the second week of the quinine treatment or three days after the close of atabrine treatment. *It is not employed at the same time as atabrine as the two are toxic if used together.* Quinidine is used when the patient has a idiosyncrasy for quinine.

Primary Pulmonary Carcinoma*

Hillis L. Seay, M.D., Huntersville, North Carolina
Superintendent Mecklenburg County Tuberculosis Sanitarium

As THE RESULT of work done at the Mayo Clinic and at other clinics in this country in the past 20 years, the fact has been established that the lung is a common, rather than a rare, site for the development of a primary cancer. In a study of 52,305 autopsy reports[1] collected from general hospitals in 1940 it was found that 10 per cent of all primary cancers originate in the lungs. Koletsky, reporting[2] on 7685 consecutive autopsies at the Cleveland City Hospital, found that the lung was the second most frequent site of origin of cancer, being exceeded only by the stomach. Simons' monograph[3] in 1937 showed that 1 to 2 per cent of autopsies reveal lung cancers and that 10 per cent of all cancers at autopsy are lung cancers.

Furthermore, Graham[4] in 1935, Porter Vinson[5] in 1936 and Simons[3] in 1937 showed that there has been an absolute and relative increase in the incidence of this disease. Perrone and Levinson, in a recent article[6] stated that in their series the incidence had doubled in the decade 1921 to 1931 as compared with the period 1911-1921. In reference to incidence, it is interesting to note that three times as many males as females have the disease.

To understand the symptoms and clinical manifestations of primary carcinoma of the lung one must appreciate the pathologic changes which occur in the lung. Most authorities agree that all primary cancers of the lung arise from a single undifferentiated parent cell in the basal layer of the bronchial epithelium. "The variation in the differentiation of this parent cell determines whether the resulting tumor will be an adenocarcinoma, a squamous-cell carcinoma, an undifferentiated round-cell, spindle-cell or oat-cell type ,or a combination of two or more of these" (Overholt[1]).

Various theories have evolved as to etiology. Simons[3] has pointed out that all the etiologic agents have in common the one characteristic of producing pulmonary irritation. Such irritation may be the real activating or causative factor.

The four cardinal symptoms of pulmonary carcinoma are cough, hemoptysis, pain and dyspnea. Overholt has shown that a dry irritative cough is by far the earliest, most constant, and therefore most important, symptom in the majority of cases. This cough is due to irritation of the sensitive bronchial mucosa by the growing tumor. Soon, as the result of the trauma from coughing and the tendency of the tumor tissues to degenerate, blood-streaked sputum appears. When partial occlusion of a bronchus occurs emphysema develops. In the wake of emphysema wheezing or asthmatic breathing will be observed. When complete occlusion with resulting atelectasis develops, dyspnea appears as the result of the mediastinal shift and the decrease in lung volume.

After complete occlusion, ulceration of the tumor cells and secondary infection may occur. The presenting symptoms may then be those of simple bronchitis; or those of bronchiectasis, pneumonitis, abscess or gangrene.

In a series of cases reported by Overholt and Rumel in 1940, chest pain or discomfort in the form of a dull ache or heavy sense of constriction was present in 44 per cent. Pain of great severity was complained of in this particular series only when extension to the pleura had developed.

Physical findings are present in 93 to 97 per cent of cases, but they are so variable that little reliance can be placed on them. Great emphasis is put by some[7] on a unilateral wheeze. This early sign does appear with localized narrowing of the bronchial lumen, but disappears when bronchial closure is complete. Porter Vinson has called attention to distant breath sounds as evidence of bronchial obstruction and therefore suggestive of neoplasm.

There were definite changes in the röntgenogram in 96 per cent of the cases reported by Overholt,[1] and in 99 per cent of those reported by Perrone and Levinson. The one most characteristic finding was a dense homogeneous, wedge-shaped shadow with concave margins typical of atelectasis, and with this usually a mediastinal shift. Evidence of superimposed inflammatory reactions was observed in 27 per cent of the cases reported by Levinson and Perrone. In a series of 9 such cases at Mecklenburg Sanatorium, 8 showed röntgenological changes.

Of the diagnostic procedures only two need to be discussed—bronchoscopy and exploratory thoracotomy. Bronchoscopic study is unquestonably the most important single diagnostic procedure in the examination of individuals suspected of having pulmonary cancer. Three-fourths of all such tumors are in the major bronchi and hence are in the range of bronchoscopic vision. This method is the safest and most practical means of obtaining a

*Presented to the Mecklenburg County (N. C.) Medical Society meeting September 1st.

biopsy in the stem-bronchus group. The diagnosis can be made earlier by this method than by any other. Exploratory thoracotomy is a rational procedure in any case in which pulmonary malignancy is suspected, just as an exploratory laparotomy is indicated in a suspected stomach lesion when the malignant nature of a growth cannot be excluded otherwise. The point has been stressed that a thoracotomy should be done only when one is sure that there is no clinical evidence of metastasis.

As to differential diagnosis, Hruby and Sweany[8] have stated that tuberculosis is the disease most commonly confused with primary carcinoma of the lung. In a group of 9 cases of primary lung cancer encountered at Mecklenburg Sanitarium, 8 were admitted with a diagnosis of pulmonary tuberculosis. In addition to tuberculosis, the following diseases and clinical entities deserve mention: bronchitis, bronchiectasis, abscess, pneumonitis, unresolved pneumonia.

The consensus as to treatment has radically changed in the last six years. In 1936, Vinson[5], reporting 140 pulmonary cancers at the Mayo Clinic, strongly insisted upon radiotherapy and surgical diathermy as the treatment procedures of choice. Today, lobectomy and pneumonectomy for cancer of the lung are considered the measures promising best results. Overholt reported 17 pneumonectomies for carcinoma of the lung in 1940. Of these patients, 9 had survived at the time of writing from 3 to 6 years afterward. On the other hand, Perrone and Levinson reported 77 pulmonary cancers and 76 patients dead within 3 to 18 months after the diagnosis had been made. In this group of 76, 2 lobectomies were done. One patient died 6 months after operation of pneumonia; one three months afterward of metastasis, not discovered before surgical intervention. One left pneumonectomy was done and this patient has survived 3 years.

In the past 5 years, 12 cases of pulmonary malignant tumors have been encountered at Mecklenburg Sanitarium. These may be divided as follows:

Age	*Color*	*Sex*	*Type*	*Autopsy*	*Bronchoscopy*	*Bronchospecimen*
50	C	M	Adeno	Yes	Yes	No
33	C	M	Adeno	Yes	Yes	No
59	W	M	Undifferentiated	No.	Yes	Yes
52	C	M	Squamous	No	Yes	Yes
26	C	M	Squamous (Oat-cell)	Yes	No	No
41	W	M	Oat-cell	No	Yes	Yes
47	W	M	Medullary squamous	No	Yes	Yes
39	C	F	?	No	Yes	No
50	W	M	?	No	Yes	No

In reference to the four cardinal symptoms, the 9 cases may be divided as follows:

In 7 cases, cough was present
In 5 cases, hemoptysis " "
In 6 cases, dyspnea " "
In 5 cases, pain " "

1 fibrosarcoma (metastatic from knee), 1 carcinoma of lung (metastatic from skin), 1 pleural endothelioma, and 9 bronchogenic carcinomas. The 9 primary carcinomas will be briefly reported and x-ray pictures in 7 of the 9 cases will be shown.

It is interesting to note that in one case cough had been present for 20 years. Chronic bronchitis in this individual may have been a predisposing factor in the subsequent development of carcinoma. In two individuals, pain overshadowed all other symptoms. One of the two had been taking large quantities of "BC" tablets and as much as 60 to 90 grains of acetylsalicylic acid daily.

Age Range—26 to 59
Color—W., 4; C., 5
Sex—M., 8; F., 1
Type—Adenocarcinoma, 2
Undifferentiated, 1
Squamous, 1
Squamous oat-cell, 1
Oat-cell, 1
Medullary squamous, 1
Section unobtainable but all evidence point to bronchogenic carcinoma, 2
Presumptive diagnosis by x-ray, 1 (?)
Diagnosis by bronchoscopy, 3
autopsy findings, 3
exploratory thoracotomy, 1 (?)
pneumonectomy and examination of specimen, 1

Case Reports

I Adenocarcinoma

(1) Colored man, aged 50.
Symptoms—productive cough, hemoptysis, dyspnea, pleurisy.
X-ray report (positive findings only)
Right lung: From the level of the 2nd rib anteriorly to the base, there are multiple, nodular densities, in size from a pea to a hickorynut.
Left lung: From the apex to the 9th rib, there is an opacity which is heavier from above downward. From the 9th rib to the base, there are nodular densities which vary in size and are difficult to outline accurately.
Impression: Pulmonary carcinoma.
Bronchoscopy: Negative.
Diagnosis at autopsy: Adenocarcinoma.
Survival time from onset of symptoms, 10 months.

(2) Colored man, aged 33.
Symptom—cough.
X-ray report—
Right lung: There is a 5-cm. annular, semiopaque density extending outward from the hilum at the level of the 2nd interspace anteriorly.
Left lung: Essentially negative.
Impression: 1. Pulmonary tuberculosis, right.
2. Pulmonary carcinoma, right.
Bronchoscopy: Not done.
Diagnosis at autopsy: Adenocarcinoma.
Survival time from onset of symptoms, 19 days.

II Undifferentiated primary carcinoma

(3) White man, aged 59.
Symptoms—cough, pain, dyspnea.

X-ray report—Bony framework, heart, aorta, trachea normal. Diaphragm—left leaf presents no abnormalities; right cannot be visualized.
Left lung: Nothing definitely abnormal.
Right lung: There is an opacity which completely obscures the entire lung field.
Impression: Massive effusion, right.
Bronchoscopic findings: Right lower-lobe divisions were ill-defined and compressed. No definitely diseased tissue was found but several small pieces of tissue were taken for microscopic study.
Bronchoscopic biopsy: Undifferentiated primary carcinoma.
Survival time from onset of symptoms, 10 months.

III Squamous cell carcinoma

(4) Colored man, aged 52.
Symptoms—cough, hemoptysis, dyspnea, pleurisy, malaise.
X-ray report—Bony framework apparently normal. Heart displaced entirely to the left side of the chest. Trachea—marked deviation to the left. Diaphragm—right leaf normal; leaf leaf not visualized.
Left lung: The entire lung field except in the outer zone at the level of the 1st interspace anteriorly is obscured by an opaque density.
Right lung: Nothing definitely abnormal.
Impression: Massive atelectasis, left.
Bronchoscopic findings: Large nodular mass was found occluding both upper and lower lobes on left.
Bronchoscopic biopsy: Squamous-cell carcinoma.
Autopsy: Not done.
Survival time from onset of symptoms, 8½ months.

(5) Colored man, aged 26.
Symptom—dyspnea.
X-ray report (x-ray made after removal of 900 c.c. pale green fluid from left pleural cavity.)
Bony framework, heart, aorta, trachea normal. Diaphragm—right leaf normal; left leaf of normal contour but the costophrenic angle is completely obliterated by a semi-opaque density which is likely due to fluid.
Left lung: Within the circle of the 1st rib and from the lower border of the 1st rib to the base in the outer zone there is a continuous area of rarefaction which is doubtless due to pneumothorax. This area of pneumothorax extends downward from the apex and alongside the spine to the level of the second rib. The lung itself appears opaque throughout.
Right lung: Nothing definitely abnormal.
Impression: Atelectasis of left lung, pneumothorax, partial, left.
Bronchoscopic examination: Not done.
Autopsy diagnosis: Squamous, oat-cell carcinoma.
Survival time from onset of symptoms, 1 week (?)
(History of doubtful value)

(6) White man, aged 41.
Symptoms: cough, pain, dyspnea, hemoptysis.
X-ray report: Heart, aorta, trachea, diaphragm normal.
Left lung: Nothing definitely abnormal.
Right lung: In the outer zone of the chest at the level of the 2nd interspace anteriorly and in the outer and middle zones of the lung at the level of 3rd rib and the 3rd interspace anteriorly, there is a homogeneous, wedge-shaped area of increased density.
X-ray impression: Pulmonary tuberculosis, right.
Bronchoscopic findings: In the right main bronchus, definite loose ulcerative and necrotic tissue was found. The same type of tissue was encountered in the lower left bronchus. Actual electric cautery was applied to both areas. (Tissue thought to be tuberculous granulation tistue)
Bronchoscopic biopsy: Oat-cell carcinoma.
Autopsy: Not done.
Survival time from onset of symptoms, 6 months.

(7) White man, aged 47.
Symptoms—malaise, hemoptysis.
Admission diagnosis—Pulmonary tuberculosis.
X-ray report 5/3/40: Bony framework, heart, aorta, trachea, diaphragm normal.
Left lung: Nothing definitely abnormal.
Right lung: Within the circle of the 1st rib, the lung presents a hazy appearance. In the inner zone of the chest at the level of the 1st interspace and 2nd rib anteriorly, there is a semi-opaque annular density 4½ cm. in diameter.
X-ray report 7/9/40: Concentric extension of the density at the level of the 1st interspace and 2nd rib anteriorly. The area of infiltration now measures 6 cm.
X-ray report 8/10/40: This x-ray shows a 1½ centimeter concentric extension of the annular density in the right lung. The area now involves the medial two-thirds of the lung at the level of the 1st and 2nd interspaces anteriorly. Superior, lateral and inferior to this density and extending from the apex to the 8th rib posteriorly, there are hazy and granular densities.
Bronchoscopic examinations: 3 such studies were made over a period of 4 months and all were entirely negative.
Operative procedure: On account of the fact that the pulmonary lesions seemed to be spreading in the right upper lobe, operative interference was deemed necessary. A total right pneumonectomy and extirpation of many mediastinal glands were done. Pathologic specimen removed revealed medullary squamous carcinoma.
Survival time from onset of symptoms, 10 months.
Note: In this last case it was found on operation that the tumor was 2 centimeters beyond the field of bronchoscopic vision. This, of course, explained the 3 negative bronchoscopies.

Resumé

1. An effort has been made to review briefly the literature in regard to incidence, etiology, pathology, symptoms and treatment of this disease.
2. A small series of 9 cases encountered at Mecklenburg Sanitarium has been reported with more detailed reports on 7 with the idea of emphasizing:
   (a) The cardinal symptoms of the disease.
   (b) The great diagnostic value of bronchoscopy.

To P. 545

Simplified Mechanization of A Minimum Cost Blood-Plasma Bank

Abstract from Chapter, Blood and Plasma Transfusion Methods
(With additions and amendments)
First Annual Supplement of the Book
Essentials of Applied Medical Laboratory Technic
(Charlotte Medical Press, Charlotte, N. C.)

J. M. Feder, M.D., Anderson, South Carolina
Anderson County Hospital

Preliminary Consideration

BLOOD plasma is processed and stored as a safeguard against some future emergency when whole blood would be unavailable or unsuited to the need of the patient being treated. The eventualities anticipated include conditions resulting from shock, burns, wrecks and tornadoes, as well as the more spectacular ones incident to warfare on a scale hitherto unknown.

Plasma is the fluid portion of the blood which can be separated from the cells when a suitable anticoagulant has been exhibited during its collection. This separation can be accomplished either by sedimentation, which requires a period of days; or by centrifugalization, which can be accomplished in a matter of hours. Regardless of the method of procedure, the result is a biological product intended for intravenous use in a human being. This at once implies all gradations of disaster to which the recipients of such substances are liable unless the maximum of vigilance is exercised constantly during its preparation.

Full cognizance of this fact was taken in the development of the technique outlined. It is one that should prove satisfactory in the hands of any reasonably well trained and careful laboratory worker. Despite the impression that has unfortunately gotten abroad, there is no *simple* or any other technique that can be safely carried out by the ill-trained or the careless.

The preparation of safe plasma presupposes at least a working knowledge of biologic procedures and, what is much more important, ability to carry out reliably the essential sterility tests. It is not a job for the unsupervised technician at a one-man stand. It is for this reason that we have repeatedly recommended central processing stations for the benefit of extremely small hospitals.

The Problem of Personnel and Expense

These two closely related items must of necessity be seriously considered when a hospital of small or medium size contemplates establishing a blood plasma reserve. Clinical laboratories in such places are usually overworked and in nearly every instance have an insufficient number of skilled technicians.

The average medium-size hospital such as ours (140 beds) must watch expenditures closely and live within its budget. We have a modest endowment, endeavor to provide the most adequate equipment and employ a full-time pathologist and radiologist. Institutions of this type are largely self-supporting and, consequently, must be extremely cautious about undertaking any new program which costs money.

Through the good offices of the local Lion's Club, a musical was given and the funds raised were turned over to us to finance the program.

The recommendations of the National Council for Civilian Defense were taken as a standard, one pint of stored plasma for each hospital bed. However, we decided to begin with a hundred units, and the following basic outfit was obtained:

100 collecting bottles, 1000 c.c. capacity, containing 600 c.c. of Muether's solution, to which 400 c.c. of blood is added (Abbott).
100 empty containers, 500 c.c. capacity, for storage of the processed plasma. (These are not sterile and must be so rendered by use of the autoclave).
12 blood-collecting sets, complete (Abbott).
6 plasma- (or blood-) dispensing sets (Abbott).
6 fine filters (Abbott)), to be used in connection with the dispensing sets.
2 plasma needles. These long needles have a lateral opening 5 mm. from tip. This prevents the creation of a vortex and cellular displacement during siphonage of plasma.

This cost $160.00 and proved ample to meet our needs.

The personnel problem was quickly taken care of by training a junior technician first as an assistant, and as time went on she took over the work and carried it on in a satisfactory manner. We found that two extra hours work twice a week was quite ample to keep the plasma reserve pool

functioning smoothly once organization was well worked out.

Plasma Room and Refrigeration

A separate plasma room meeting all of the specifications as to freedom from dust and bacteria is impossible to provide in an average general hospital. We partitioned off the blind end of an unused hallway and with a small expenditure for shelves and lights made a satisfactory working space.

Refrigeration space larger than that usually available must be provided. This was met by us in the purchase of a large, old-fashioned ice box (see figure 2), and the good offices of a benevolent refrigerator dealer were enlisted to place in it a freezing unit at low cost. This outfit does not quite meet the optimum standard which requires that a 5° C. temperature be maintained, but it does remain constantly at 8 or 9° C. and this has proved to be quite satisfactory.

Donors

This task of obtaining the blood, which at first appears to be the easiest feature of the work, will prove quite difficult in most places. There is quite a difference between getting a person to give blood to a certain patient, and getting one to give a pint of fluid for some abstract use at some time in the future.

A nearby college, the local post of the State Highway Police, and some volunteers from churches and service clubs aided in filling the needed flasks. The response will not be brisk, but patience and perseverance will turn the trick.

Drawing Blood

The donors are instructed to report in the morning without breakfast. To obtain reasonably sightly plasma this rule must be rigidly adhered to. The basic arrangement shown in Figure 1 is sufficiently flexible to meet nearly any doctor's technique for drawing blood. The Bleeding Room is also our Basal Metabolism Room.

Storage of Blood

The blood is refrigerated for 10 days. The optimum temperature is 5° C. but our cooling unit will not bring the temperature below 8° C. and this has proven satisfactory.

Pooling Plasma

This process is shown in Figure 3. An attempt was made to siphon individual bottles and store by type, but the pooling policy has proven much more satisfactory and meets the requirements of the Division of Biologic Control of the United States Public Health Service.[2]

Filling Storage Flasks

As shown in Figure 5, considerable care is exercised in the performance of this step.

Sterility and Safety Tests

Technique for the performance of these is noted under Figure 6. It is imperative that the minimum standard of bacteriological control be insisted upon.

The Use of Preservatives for Plasma

Several eminent authorities[3 4] have recommended that preservatives be used routinely. This agrees with the regulations laid down by the Division of Biologic Control of the United States Public Health Service. Research recently conducted by that body[5] demonstrates rather conclusively that some of the preservatives commonly employed fail to inhibit bacterial growth.

We have been "canning" blood on our pediatric service for a number of years using sodium citrate as an anticoagulant, using no preservative or special technical safeguard besides careful surgical asepsis. Repeated negatives cultures have been made from the supernatant plasma in these containers.

We recently discontinued the use of preservatives in processing plasma and have failed to encounter any evidence of contamination as a result. No type of preservative is employed in bacteriological culture media and, notwithstanding an open technique, in the hands of competent bacteriologists contaminations are (or should be) rare. The matter of preservatives will be one of individual choice, but it is strongly urged that the references cited be carefully read before any decision is reached.*

Line Filters

It is mandatory when plasma is given that a suitable filter be cut into the line leading from the container to the recipient. The Abbott type filter shown in Figure 3 has simplicity, economy and ease of cleaning to recommend it. *The use of a filter is not optional. Deaths have been caused by the use of unfiltered plasma.*[6]

All flasks of plasma processed by us bears the following label which emphasizes this admonition together with other pertinent facts:

POOLED HUMAN PLASMA READY FOR USE

THE SEDIMENT PRESENT IS A NORMAL CONSTITUENT AND DISSOLVES AT ROOM TEMPERATURE.

IT CONSISTS OF PRECIPITATED PROTEINS AND FIBRIN AND *IS NOT DUE TO CONTAMINATION.*

THIS MATERIAL HAS BEEN CULTURED AND FOUND NEGATIVE FOR ALL BACTERIA BOTH BY AEROBIC AND ANEROBIC METHODS.

ALL DONORS PROVEN SYPHILIS-FREE.

A FILTER MUST BE USED IN THE LINE WHEN THIS MATERIAL IS GIVEN. PLASMA DILUTED 50 PER CENT SO NO ADDITIONAL DILUTION REQUIRED.

DO NOT HEAT CONTENTS OF THIS FLASK ABOVE 98.6° F. TO DO SO WILL RENDER IT TOXIC.

THE NUMBER ON TOP OF FLASK IS A SERIAL NUMBER AND DOES NOT REFER TO TYPE.

DATE—

Cleansing and Sterilization of Equipment

It is essential that the full coöperation of the operating room crew be obtained, as sterilization facilities to be found in the average laboratory are inadequate.

All material used in processing the plasma, as well as collecting sets etc., are sterilized by autoclaving at 15-pounds pressure for twenty minutes.

Sterilization must be carried out *immediately* after cleansing which consists of thorough washing of all equipment in tap water followed by the use of freshly distilled water. To allow material to stand after preparation is to invite pyrogen reactions.

All new rubber stoppers and tubing should first be treated by soaking several hours in 0.25 per cent sodium hydroxide solution and then washing for several hours in running tap water.

CAUTION:—In all cleansing operations where rubber tubing is concerned the lumen must be flushed with a large bulb syringe. Do not assume that this will be taken care of by gravity.

MOST PLASMA REACTIONS ARE NOT DUE TO THE MATERIAL *PER SE,* BUT TO INSUFFFICIENT WASHING AND CARE OF THE EQUIPMENT USED IN ITS PREPARATION OR ADMINISTRATION.

Centrifugalization versus Sedimentation

For use of the centrifuge to separate plasma from cells adequate mechanical equipment must be available. The semi-antiquated centrifuge found in the average laboratory will not long bear up under the strain of day-and-night running, as it will have to do to meet the demands of the plasma bank. Should it do so, it will be available for little else during that period, thereby embarrassing routine work.

On the other hand, new equipment will cost well over $700.00, if obtainable at all.

We have concluded that the anticoagulant solution used will bear a direct relationship to whether or not the sedimentation method shall be employed. Blood collected in sodium citrate usually begins to show signs of hemolysis in from five to seven days. In our experience, the maximum yield of plasma has not been formed by then, and does not appear with suitable packing of the cells until after the tenth day. We have found no evidence of hemolysis after thirty days in blood stored in Muether's solution[7] dextrose 4.68%, sodium citrate 0.43%, monobasic sodium phosphate 0.025%, di-basic sodium phosphate 0.25%. The obvious conclusion is that this is an ideal preservative for blood if the sedimentation process is to be used.

The time-saving factor also favors sedimentation. When the blood is collected, it is placed in the refrigerator and needs no more attention until the time arrives to separate and pool the plasma. Centrifugilization requires the almost constant attention of a technician throughout the day.

The Annoying Matter of Precipitation

Regardless of the method employed, all plasma will show more or less precipitation upon standing. The beginner will at once think of contamination. This is not the case, and it will be found that this protein substance will redissolve if allowed to stand at room temperature for a short time. However, to reassure doctors who might be concerned by this occurrence, our labels carry a reference reassuring as to this sediment. The line filter is used to eliminate particles which do not dissolve readily.

Administration of Plasma and Perpetuation of Bank

The Abbott dispensing set fits the plasma storage flask and this outfit is to be kept sterile complete with cut in filter. The substance is given without cost and in each instance where it is given to a hospital patient (white), an attempt is made to have the family of that individual furnish two donors who will each leave a pint of blood to be processed into plasma.

Unit Cost of Plasma

We have estimated that, counting overhead, each pint of plasma in storage costs some $1.75. It is believed that in large scale operations, including the cost of full-time technician and helper, the material could be produced for less than $2.00 per pint.

Time Element

We estimated that each pint of plasma represents a total of twenty-five minutes of a technician's time. In large-scale operations, such as those of a central processing depot, asuming that the blood has been collected and forwarded to the depot, we believe that one technician and an intelligent helper could turn out a hundred pints of plasma in a day. The $2.00 estimate would pay all overhead and the salary of the employees; but it would not cover cost of the fixed equipment, *i.e.,* sterilizers, etc.

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In Appreciation:—

I wish to take this opportunity to express my appreciation to Dr. John Elliott of Salisbury, North Carolina for his pioneer research in blood plasma. All of us who are interested in the furtherance of this work owe to him an unpayable debt of gratitude.

IN REBUTTAL: OPEN VERSUS CLOSED OR VACUUM TECHNIQUE AND THE ELIMINATION OF THE USE OF PRESERVATIVES

The procedure outlined is essentially an open technique and as such will come in for various degrees of criticism from the proponents of the entirely closed or vacuum method. Anticipating this, these facts are presented for consideration:

1. Undeniably at Step 1 (opening of collecting flask for drawing blood; Step 2 (transferring plasma to pooling jug); Step 3 (transferring stoppers in pooling jug); and at Step 4 (placing plasma in storage flasks) there are breaches in the continuity of the system.

However, in each instance where caps are removed from flasks, this is accomplished by draping them with a piece of sterile gauze moistened with Solution Metaphen and enveloping them in this completely until again required.

The transfers of the various pieces of sterile equipment are made in split-second time using extreme care not to touch any unsterile item. *IT IS NOT WORK FOR BUNGLERS.*

Filling of plasma storage flasks is accomplished by having a square of sterile gauze, moistened with Solution Metaphen, draped tightly about the neck of the flask at the point of entry of delivery tube.

It is to be pointed out that, even in the most extremely orthodox closed method, the plasma needle is exposed to air-borne contaminants during its excursion from its sterilized shield to the point of puncture of the cap.

2. The technique presented has the following features to recommend it:

(a) It is the least expensive of all suitable plasma-processing procedures. The finished product can be stored at less than $2.00 a pint. In addition to this, the flasks may be used repeatedly.

(b) No special administration sets are needed. (We use those supplied by Abbott; but just so filters are available, the material may be poured into any type of container that meets the approval of the individual doctor.)

(c) This method is so simple in contrast to any that has been advocated that one can easily operate it without a degree in mechanical engineering.

(d) Rigid bacteriological controls performed by us on all pools and on individual flasks have demonstrated the sterility of the finished product. In addition, several flasks picked at random were sent to the Division of Biologic Control, National Institute of Health, Bethesda, Maryland, for evaluation. Every report was: "No bacterial contamination or toxic reaction demonstrated in the material received."

3. In regard to the matter of preservatives.—It is felt that these may tend to give a false sense of security and we can not agree that exhibiting them in relatively large doses will not prove detrimental in some instances. Our own work has demonstrated that, by the use of reasonable care, uncontaminated plasma can be produced without their use, and we think their elimination advantageous.

A point not often stressed is the bactericidal properties inherent in human plasma, especially that processed with Muether's solution. One of our experiments consisted of pouring 200 c.c. of plasma so prepared, without a preservative, into a large, unsterile dish and allowing it to remain open and exposed to room conditions for half an hour. This was returned to its flask and incubated for five days. Frequent subcultures made during that period failed to demonstrate growth. Of course, such reckless handling of plasma as a routine measure must be frowned upon and every precaution exercised to the utmost; yet it would seem to prove the presence of more than a slight bacteria-inhibiting property.

In the final analysis, when plasma reactions present themselves it is extremely probable that pyrogen trouble due to poorly prepared equipment, and not contamination, is responsible. Many years of experience in handling biological and bacteriological material form the gackground for our impression that the contamination factor in the preparation of plasma has been overemphasized. Undoubtedly this is as it should be, as excess of caution is far more desirable than laxness based upon a belief that contaminations are rare or impossible.

Finally, it must be pointed out that, extemporized though it is, we do have a special plasma room which is kept as dust-free as possible. It will

in most hospitals be found possible to arrange quarters which will prove nearly ideal. Plasma should not be prepared in the ordinary dust-laden air of the general laboratory.



Cuts supplied by courtesy of Abbott Laboratories.

Figure 1

COLLECTING BLOOD FROM DONOR

A. The donor's arm is prepared by washing with alcohol and sponging with a suitable antiseptic. The cuff of a blood-pressure apparatus is applied, the systolic pressure determined, and the mercury column dropped about 15 mm.

B. A sterile Abbott Collecting Set is attached to collecting flask which contains 600 c.c. of Muether's solution (buffered saline, citrate glucose). The needle is inserted into the vein.

C. The pump (a special appliance supplied by Abbott Laboratories) is started on "Low" and as the blood flow begins, the technician rotates the flask briskly to mix blood with diluting fluid. In the event that the pump is not available or desired, the collecting sets come equipped with a rubber suction bulb which creates a suitable vacuum in the collection flask.

D. Filled collection flask ready for storage. Note holder in which two test-tubes are supported. Into one of these, 3 c.c. of whole blood was placed. From this serodiagnostic tests for syphilis are made. The other containing one c.c. of 2.5 sodium citrate in normal saline solution received 1 drop of blood. This is used for determining donor's type, and is kept as a part of a card index for suitable reference in case of emergency. Blood for these pilot tubes is best obtained by pinching the collecting tube between the thumb and forefinger at a point below where it enters the flask. If this is done immediately before the motor is stopped no difficulty will be experienced in obtaining sufficient blood for the required tests.

Figure 2

STORAGE OF BLOOD

After collection, blood is stored for 10 days at an optimum t. of 5° C. (Several degrees above this makes no difference but it must not be allowed to freeze.)

Refrigeration units of the type shown can be extemporized at a modest cost. The storage space is an old-type ice-box and cooling coils have been placed in the compartment shown at left and formerly used for ice.

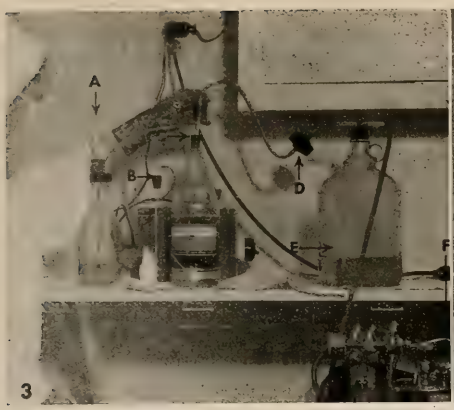
Some expedient extemporization of this type will be required by nearly all laboratories entering into plasma work as it will be found that the available refrigeration facilities are inadequate.

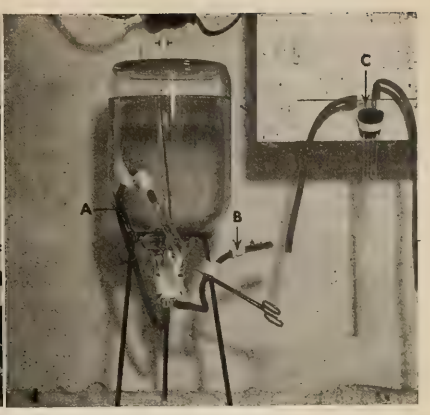
For every 20 stored blood collection bottles the following refrigerator space must be provided:

24 x 20 x 15 inches.

For every 20 flasks of stored processed plasma:

24 x 20 x 10 inches.





Cuts supplied by courtesy of Abbott Laboratories.

Figure 3

TRANSFERRING PLASMA FROM COLLECTING BOTTLE TO POOLING JUG

A. Air filter consisting of a 10-c.c. syringe barrel packed with cotton and superimposed upon the long limb of a rod which passes beneath the surface of a 10% phenol solution.

B. Plasma needle assembly as used in *C*. Note that the needle passed through a hole in the rubber stopper while on the other side a short *L* glass tube connects with air-filter bottle.

A SUGGESTION:—Holes are best bored in rubber stoppers by means of a heated metal rod of the proper dimension. Immediately after withdrawal, the stopper is plunged into xylol and quickly dried. This substance dissolves the loose rubber and a smooth opening results. The use of an ordinary cork-borer approaches the impossible.

C. Plasma needle assembly in use. Great care must be taken in changing containers but with reasonable care the step can be bridged without trace of contamination. The needle must be partially withdrawn as each fresh bottle is placed, then by aid of a strong light placed behind flask the needle is thrust downward until its tip just clears the cell column.

D. Abbott line filter. This prevents blood clots and coarse particles from entering pooling jug.

E. Pooling jug. An ordinary syrup jug which can be obtained for a few cents from any drug store. The rubber stopper contains two *L* glass tubes. On the receiving side that portion within the jug is slightly longer than the one connecting with the suction pump.

F. Operating room type suction pump. If unavailable the general-duty laboratory water suction pump will be perfectly satisfactory, but a safety flask will have to be placed between it and the pooling jug to prevent accidents due to reverse pressure.

Figure 4

POOLING JUG READY FOR STORAGE

As each jug is filled, the stopper used for collection is removed and the outfit shown in *C* is substituted. It will be noted that one long and one short glass tube enters the rubber stopper. The long tube passes nearly to the bottom of the jug while the short one just clears the neck of the container. When this appliance is wrapped for sterilization each glass tube is fitted with a short piece of rubber tubing. To the one connecting the short section a piece of glass tubing is appended. This side will be used for filling the flasks. The opposite side will be attached to the air filter. These are designated in the cut as *A* and *B* respectively. Sterility is insured by encasing the free ends in test-tubes held firmly in place by cotton collars.

After this appliance has been inserted in the jug the tubes are clamped off as shown, either by hemostats or Hoffman clamps. The stopper is firmly secured by adhesive tape and the jug inverted in a tripod as shown, or in other suitable support. It is now ready for transfer to the refrigerator where it remains for 48 hours. At the end of that time all coarse particles, blood cells etc., will have gravitated into the neck, below the zone of tube used for withdrawal.

*This refers only to smaller hospitals preparing plasma for their own use. Larger institutions, receiving Federal aid classify under the requirements of the Biologics Control Division of the United States Public Health Service. The ruling of this body is that plasma shall be prepared so as to contain Merthiolate Solution 1-10,000. (This is prepared from a 1 percent solution obtainable only upon special order to Eli Lilly Company, Indianapolis..)

DEPARTMENTS

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

PSYCHIATRY IN THE ARMY

I ATTENDED at the Statler Hotel in Boston on August the tenth a dinner given in honor of Dr. Roy Dennis Halloran. He had just been commissioned Colonel in the Medical Corps, United States Army. Dr. Halloran appeared in uniform and in readiness to assume his duties in the office of the Surgeon General, as head of the Division of Neuropsychiatry.

Upon Dr. Halloran now comes the responsibility of organizing the medical structure that will care for the neurological and psychiatric conditions and patients amongst the soldiers in the United States and wherever else they may be. It is a great undertaking and it will make upon the psychiatrists of our country such a call to emergency work as was never before demanded of them. At no other time in the world's history has mankind, civilian and military, been subjected, without warning, to such destructive, deadly and terrifying forces as are now being released on the surface of land and water, beneath them, and from various levels of the air. There can be little doubt that physical, physiological and psychological responses to the terrors and the traumatizations will result in new symptomatology.

Psychiatrists are responding generously to the call for their services and out of the abundance of the numbers Dr. Halloran will eventually fabricate an organization adequate in size and competent in skill to deal with the many psychiatric problems.

Dr. Halloran will be in the office of the Surgeon General of the United States Army. The hope is entertained that as promptly as possible he will be able to select a chief psychiatrist for each of the nine Service Commands of the United States. Details of the plan have probably not been thought out, but one supposes that psychiatric hospital facilities will have to be provided in many portions of the country for those soldiers who have become nervous and mental casualties. And psychiatrists, with such hospital and other facilities as can be made available, will have to be in constant readiness within the fighting areas also to house and to minister to acute neurological and psychotic situations.

To the Macedonian call Dr. Halloran answers with qualities that have traditionally stood the physician apart from his fellow-mortal. He has comparative youth, sound health, a good conscience, spacious learning, academic and medical; active and varied experiences in treating persons sick in body, in mind, and in both domains. Cambridge-born, in Massachusetts; a graduate in the arts of Dartmouth, as Daniel Webster was and Dr. Douglas VanderHoof and Dr. Arthur H. Ruggles, President of the American Psychiatric Association. Dr. Halloran is an erudite licentiate of Columbia University's College of Physicians and Surgeons. Through the slow and tedious gradations common to service on the medical staffs of state hospitals, Dr. Halloran came finally to the Superintendency of the splendid and comparatively new Metropolitan State Hospital at Waltham, Massachusetts.

There, my fellows in psychiatry and out of it, is an institution to which we should go once every year or so, both for tutelage and for inspiration. There, through the fusion of the Commonwealth of Massachusetts and Dr. Roy Dennis Halloran, the mentally sick are cared for as all of us pray we might be ministered to were we to become dishevelled within our individual domes. The mutual inspiration existing amongst a splendid group, nurses, physicians and other employes makes possible in that great hospital psychiatric work of the first order. But a divine sort of discontent urges Dr. Halloran and his asociates not to rest, but to be ever critical in their judgment of their own achievements. It is easy to believe that Dr. Halloran encourages and inspires his co-workers to do their best and that their loyal support of him moves him always forward. He is looked upon as an ideal administrator.

The tenth of August will be a historic day in the life of Dr. Halloran and in the history of American Psychiatry. And the occasion surely opened for many an American soldier the alabaster box of hope and of healing. The reference should not be to American soldiers alone. Medical science should know nothing of geographical and political boundaries. And those of us who minister to the sick, in body and in mind, should be blind to political barriers and give of ourselves freely to friend and to non-friend. To the sick, the wounded and the suffering, everywhere and at all times, nurses and physicians should have full access. A solemn avowal that they would make no treasonable report about the enemy should pour around nurses and physicians an armour more protective than that of Achilles, so that they might move freely everywhere, seeking the sick and the wounded whom they would succour.

Dr. Halloran may tell us that the primal preparation for war is made, not in a great industrial plant, not in camp or on the drill-field, but deep within the individual's own mind. And there, too,

he may sometime tell us, the will-to-victory abides and that the physical body, which manipulates the death-dealing mechanisms, is only the obedient servant of the trained psyche. Stonewall Jackson, an obscure and uninspiring pedagogue, was preparing his mind for war while teaching a group of boys in a small village. But he was so disciplining his soul that when war came he moved with the certainty and the majesty of a god. The mother-love of the mother of Achilles made of her a pacifist. To make certain that her young son would not become involved in warfare, she concealed him, masked in the clothing of a girl, amongst her women kinsfolk. But from such an environment the youth went, in changed attire, to do battle against the Trojans, and he became the mightiest and the most awe-inspiring soldier the world has ever known.

Victory comes at last to those of the stoutest hearts and the firmest wills to win. To those attributes in our soldiers Dr. Halloran and his associates will devote all of their resources. With the might and the hope and with the prayers of our great nation in support of them the cause for which our young men do and die must become immortal.

SURGERY

Geo. H. Bunch, M. D., *Editor,* Columbia, S. C.

THE CRAZE OF THERAPEUTIC BLOODLETTING

Conservation of blood and meticulous hemostasis at operation is a basis principle in modern surgery. The value of circulating blood as a vital fluid and the necessity for transfusion of human blood as a therapeutic agent are well known even to the layman. In an attempt to reconcile this modern concept with the practice of bloodletting which in the 18th and a great part of the 19th century was almost universally considered an essential part of the treatment of almost every human disease, one wonders how intelligent physicians could for so long a time have blindly persisted in therapy which almost never was of benefit and which often was obviously far more deadly than the disease. One wonders, too, how much of the therapy of today may be based upon mass psychology and blind tradition rather than upon proper interpretation of cause and effect.

Fields of London in 1756, in *A Dissertation on Bloodletting,* wrote: "There is more bad blood in this Kingdom than is generally suspected; it is a natural distemper, and affects the mind as well as the body; it creates a despondency which frequently ends in madness, self murder, drinking, of finding diversions for every hour in the day and the night too." Bloodletting was justified by one writer on the principle that the more dirty water there is removed from a spring the more clean water will replace it.

The views on the treatment of insanity by bloodletting of over a hundred psychiatrists and superintendents of institutions for the insane, both in this country and abroad, were incorporated in 1854 by Earle in a book on *The Practice of Bloodletting in Mental Disorders.*

Baron Larrey, one of the most famous military surgeons of all time, advocated bloodletting even in the treatment of nostalgia. It is the irony of fate that this should have been practiced upon Napoleon's starving soldiers by one who was exonorated, after trial by court martial, of the charge of having cavalry horses killed in order that the sick might be fed on the retreat from Moscow.

In the New York Hospital before the discovery of anesthesia muscular relaxation for the reduction of fractures and dislocations was obtained in some degree by the administration of opium and by bleeding the patient to the point of syncope. This procedure was termed, bleeding *ad deliquium animi.* In that institution in 1820 a man aged 20 had already been bled before being admitted after a carriage had pased over his abdomen. An enema brought away two quarts of blood. At ten o'clock he was bled twelve ounces. Next day he was bled eight ounces. In four days he died. The autopsy findings included rupture of the liver and the abdomen filled with extravasated blood. Shock and exsanguinating hemorrhage had been treated by repeating bloodletting.

In 1830 Hall said, "No remedy is more general, not even calomel or blue pill, and this fact may assure us that no remedy is more abused."

Benjamin Rush, an advocate of bleeding in phthisis and many other diseases, took 90 ounces of blood at one time from Dr. Dewees, "and with advantage." Dr. Dewees stated that he took 80 ounces of blood within a few hours from a delicate woman who had been seized with convulsions during the end of pregnancy. The patient recovered but remained blind for six months. Barlow took 19 ounces from a feeble, emaciated boy with diabetes twice a week until a total of 209 ounces was taken in 12 successive bleedings. Dover, the freebooter and doctor of Dover's powder fame, took 100 ounces from each of 180 patients with bubonic plague. It was the practice of Sydenham to bleed in smallpox, erysipelas, gout, rheumatism, hysteria, chorea, insanity, dysentery, renal and biliary colic, hemoptysis, hematemesis and hematuria, leucorrhea, metrorrhagia, hemorrhoids, scurvy, epistaxis, convulsive cough in children and in the condition known as "going into a decline."

George Washington is said to have died after having been bled. From fear of being bled Lord Bryon would not allow a physician to be called until he was almost in extremis. The patient's reaction to the physician is shown in an epigram at the expense of the Quaker English practitioner John Lettsom:

I, John Lettsom,
Purges, bleeds and sweats 'em.
If after that they choose to die,
I, John, lets 'em."

THERAPEUTICS

J. F. Nash, M. D., *Editor*, Saint Pauls, N. C.

SUCCESSFUL TREATMENT OF ACUTE MERCURY POISONING.

Every doctor in the general practice of medicine should keep thoroughly abreast with the progress of knowledge of how to manage all the common forms of poisoning. Among the most important of these is poisoning by mercury.

Here is described a method of treatment which has proved remarkably life-saving, and which the doctor should be fully prepared to administer at a minute's notice:

The first objective is the removal of the unabsorbed mercury as soon as possible; the second, removal of the absorbed mercury rapidly. In cases of oral ingestion the first is best carried out by simple gastric lavage using large quantities of fluid. When immediate lavage cannot be instituted, fluid should be given and vomiting induced.

Following absorption, the mercury is distributed almost equally throughout the body tissues, ordinarily in such small concentrations that it causes little damage. Excretion begins almost immediately by three major pathways, the principal one the renal. The mercury is collected in the kidneys and passes out in the urine. Concentrations of mercury in the bowel reach a level to cause gangrenous colitis. The colon is an important if somewhat later excretory avenue. The third and least important excretory area is the mouth where damage (stomatitis) frequently occurs.

For the kidneys lavage by massive diuresis is the method of choice—fluids in large amounts by mouth and parenterally. The colon is affected by immediate contact and later by excretion. High colonic irrigations are to be begun immediately and repeated at regular intervals. Irrigation of the mouth is to prevent both direct and indirect toxic effects.

A neutralizing or antidotal agent for mercury, in addition, is required. Sodium formaldehyde sulfoxylate is a stable, white powder, readily soluble in water. It is almost non-toxic whether used orally, rectally, or intravenously. It reacts directly with mercuric chloride (more readily in alkaline medium) to precipitate mercury or to form a mercury compound which is one-third to one-half as toxic as the original mercury salt. The drug is largely excreted in the urine.

For a series of 20 patients over a period of 18 months the routine use of this antidote was:

1. Immediate gastric lavage, using 4% of the drug in 2 to 3% sodium bicarbonate solution, 500 c.c. leaving 250 c.c. in the stomach.

2. Injection of 200 c.c. of 5% taking one-half hour for making the injection, following it with a continuous drip of 5% glucose in normal saline. Injection of an additional 100 c.c. of 5% intravenously six hours later.

3. Two high colonic irrigations a day, using 4 to 5 liters of 1:1000 for each irrigation.

4. Gastric lavage with 500 c.c. of 4% in 2 to 3% sodium bicarbonate twice a day for two days.

5. Injection of at least 2000 c.c. of 5% glucose in normal saline intravenously daily for seven to 10 days.

6. A mouth wash of 2% sol. f. s. in 2 to 3% sodium bicarbonate solution two to three times daily.

7. Morphine, stimulants, and other supportive measures as needed. If shock is present, combat by appropriate methods.

8. Soft diet and forced fluids.

Daily urine examination is done, and daily nonprotein nitrogen, carbon dioxide combining power, and creatinine determinations are made on the blood. Specimens of urine, stool, vomitus, colonic washings, stomach washings, and mouth washings are examined for mercury daily.

Mercuric chloride had been taken in doses ranging from 7.5 to 45 grains. Emesis occurred in all patients at intervals of from five minutes to two hours after ingestion. In 13 within 15 minutes. The interval between ingestion and therapy was 15 minutes to 36 hours.

Sixteen patients recovered completely with no residual effect, four died. Of these, three developed anuria and uremia, and the other died shortly after ingestion of the mercury in respiratory failure, the result of aspiration of vomited material or edema of the glottis.

1. Ralph Wolpaw and Nathan Alpers, Cleveland, in *Jl. Lab and Clin. Med.*, Aug.

DEATH FROM ASTHMA: Opiates should never be given in the treatment of severe asthma; ephedrine derivatives, epinephrine and aminophylline are far superior. Even when these fail, morphine and its derivatives should not be used. Supplementary drugs such as digitalis should not be employed unless the need for them has been clearly established. Bronchoscopy may occasionally be life-saving. —Vaughan & Graham, Richmond, in *Jl. A. M. A.*, June 13th.

TUBERCULOSIS

J. Donnelly, M. D., *Editor*, Charlotte, N. C.

NEWER IDEAS ON THE EPIDEMIOLOGY OF TUBERCULOSIS

Pulmonary tuberculosis shows many changes as compared to the disease of 25 years ago, and some writers have adopted the changes as new discoveries. These are attributed by some to our better methods of diagnosis, but that is only losing sight of the fact that all these changes can be explained by shifts in epidemiology.

This subject is discussed in a paper in a recent number of the *Mount Sinai Hospital* (N. Y.) *Journal*. The authors divide the course of tuberculosis into three epidemiological phases, (1) upgrade, (2) peak, and (3) downgrade, and note that at the peak the population was fully tuberculized, while now, the period of downgrade, there is detuberculization. The mortality and morbidity rose during the upgrade and were highest at the peak; now they are declining steadily. Contact with the disease increased during the upgrade, and, during the peak, was widespread and severe, but, now, during the downgrade, is declining. There was no reinfection during the upgrade, and hardly ever before middle age at the peak, but now there is a rising incidence of this type. The period of latency after primary infection and chronic pulmonary tuberthe upgrade, but was prevalent and long between primary infection and chronic pulmonary tuberculosis at the peak. Now, in the downgrade, latency is declining, and the period between primary infection and chronic pulmonary tuberculosis is shortening.

Age prevalence of the disease has shifted from the age period 15-30 years to the age period 25-50 years; and recent exposure to infection, not important at the peak, is now quite important. The authors also state that at the peak old endogenous reinfections were the rule; while now, in the downgrade, fresh exogenous reinfections are more common, and, while the site of infection was usually apical or subapical at the peak, now in the downgrade, the infection may be in any part of the lung with the four lobar apices frequent. A generation ago, we are told, contact with tuberculosis was more or less constant, the primary infection was severe, reinfection rare, and in later life. Now contact is inconstant, original infections much milder, tend to heal promptly, and recur throughout life even within a few years. There are places where tuberculosis is still prevalent, where intensive exposure still exists—as in tuberculosis institutions. Frequently now exogenous infections run the same course regardless of first, second, or any subsequent infection of the same body from without. Any of these infections, if severe enough, and if they occur when the physical resistance is low, may go on to progressive disease at any age. Recently many cases, after loss of sensitivity from a previous infection, have been closely followed, and it has been observed that a fresh infection will produce lesions which have the appearance of either primary or reinfection types of disease.

According to the authors, any of these recurrent infections may result in chronic progressive pulmonary tuberculosis and may develop:

(1) From the focus at the site of exogenous invasion by breakdown and local spread.

(2) From the hilar lymphonodular focus by direct extension through a bronchial wall.

(3) From progressive apical and subapical secondary lesions of lymphohematogenous origin.

The first of these forms of infection in their mimimal latent phase are detected only accidentally unless by periodic x-ray examinations of exposed adults. Lesions of this type are now more frequent because of heavy exposure in tuberculin-negative young adults than was the case when young adults were tuberculin-positive before such exposure. The second form was formerly seen rather frequently in severe childhood infections. This mode of extension is now more often seen in adults than was formerly the case. The third type is the most frequent form of chronic pulmonary tuberculosis. At times a chronic lesion of productive tuberculosis may show a greater tendency to break down than will a large infiltrative lesion. Recently there has been noticed a tendency to more rapid extension of infection, and there may be seen a combination of two or even all three of the forms. Often a breakdown of the primary focus is followed by the coalescence of the lymphohematogenous lesions in the same lung area, and these spreading areas will soon become continuous.

The authors believe that the changes in the forms of infection have materially influenced the principles which form the basis of our accepted methods of treatment. Constitutional therapy remains the only treatment for reëstablishing resistance to tuberculosis, and collapse therapy is still the only means of overcoming obstruction to healing caused by tissue defects not likely to disappear spontaneously. The shortening of the latency period necessitates a combination of prolonged constitutional and collapse therapy, whereas previously the problem was mainly mechanical control of bronchogenic spread. X-ray surveys have called attention to more frequent treatment of the latent minimal early infiltrate, or primary lesion. Such lesions, under bed rest, in considerable proportion heal by resolution or calcification.

All will agree that the duration of the rest period should be determined in general by the behavior of the lesion. The authors say that this rest period should not exceed six months, that it is unreasonable to keep patients with such lesions at rest for years, since the post-primary lymphohematogenous latent period may last for years. Frequently even a rest period of two years will not check progression from a secondary lesion at the end of that time. It is much more important to keep patients with such lesions under constant observation than to keep them at rest all the time. Treatment in institutions of patients with minimal lesions discovered by x-ray surveys lacks logic, say they, and that if such cases are treated in institutions they should be separated from the open cases.

Treatment of tuberculous lesions at the site of invasion should be conservative as long as possible since the spontaneous healing tendency under rest is remarkable, many large infiltrations disappearing as quickly as they have appeared. Thin-walled cavities often close and heal under bed rest alone. Chronic bronchogenic tuberculosis may follow apical and subapical lesions long after the arrest of the primary lesion. Hence, collapse therapy should not be attempted until sufficient time has elapsed to observe the process of evolution of the infection and after the lung condition has been treated constitutionally. The authors argue that apical and subapical productive tuberculosis is far from harmless, that such nodular lesions apparently respond temporarily to treatment, but tend to progress eventually, and that such lesions are often bilateral in the beginning, or become so.

In their conclusions the authors restate their opinion that "under prevailing epidemiological conditions, recurrent tuberculous infections, primary-like in character, are becoming increasingly frequent." Also, bronchogenic extension from the site of invasion and post-primary lymphohematogenous dissemination frequently overlap. Collapse for the former, and bed rest for the latter must be used more often together. The authors also conclude that contralateral lesions of lymphohematogenous origin are often the cause of failure of collapse therapy, and that permanent collapse therapy should be delayed until the trend of the infection in the body has been observed.

DENTISTRY

J. H. Guion, D.D.S., *Editor*, Charlotte, N. C.

DENTAL DECAY

Reports of well conducted investigations into cause and cure of dental caries are always of interest. The present state of our knowledge of the condition is far from satisfactory. A recent contribution[1] offers helpful aid.

After reviewing sixty articles on this subject which have appeared in various of the leading dental and medical journals of the world in the past third of a century the author concludes that the experimental and clinical findings suggest that:

1) deficiencies in diet when teeth are being formed cause defects that persist, although the slow growth of human teeth renders them less susceptible to periodic deficiencies and metabolic disturbances than the teeth of experimental animals;

2) fully developed human teeth are practically immune to demineralization;

3) much of the contradiction in the literature on dental caries in man derives from unwarranted deductions from animal experiments and from experimental studies on man which could hardly yield other than inconclusive results; and

4) no specific dietary factor or metabolic condition has been proved to cause or control dental caries in the fully developed human tooth.

Certainly this study does not solve the problem of dental caries; but it does point the way toward recognition of some of the causes of the failure of our investigators to make more rapid progress toward the goal. With this new light we can hope to get on faster.

OPHTHALMOLOGY

Herbert C. Neblett, M.D., *Editor*, Charlotte, N. C.

OCULAR ARGYROSIS

Pigmentation of the body tissues has been known since the middle of the 17th century, when it was fashionable to treat epilepsy, tabes, and all manner of incurable diseases with vast quantities of silver internally. Cases have been reported in which the skin, all mucous-membrane surfaces, all organs of the body, the skeletal and central nervous systems have been pigmented by the silver salts either through occupational or medicinal means. In the first case workers with silver preparations have been so affected, and in the second case the use of silver salvarsan in the treatment of syphilis, or silver-nitrate pills prescribed in gastric disease have been common offenders. The condition frequently involves the eyes. In the occupational and medical argyrosis ocular manifestations have frequently been the only sign of the conditoin when the pigmentation may be seen in the conjunctiva, but more invariably and clearly on Descemet's membrane of the cornea where its occurrence is accounted for by the predilection of the granular deposits of the silver salts for this elastic tissue and that of

1. A. M. Butler, in *Medical Progress Annual*, Vol. III.

the ocular and palpebral conjunctiva. The epithelium and endothelium of the cornea are unaffected by the stain. The deposits in the cornea give this body a slate-grey appearance, while the conjunctiva shows a dirty grey-brownish discoloration. The staining of the cornea can be of sufficient degree to alter visual acuity; its most damaging effect to the eye however is cosmetic, the stain being permanent and treatment of no avail.

The writer during the first eight months of this year has seen eight cases in his private practice, one man and seven women of ages varying from 30 to 60 years. All these cases resulted from the prolonged use of argyrol. In no instance was there an assignable cause for protracted use of the drug. In several the history was that it had been prescribed as drops for irritated eyes; in several it had been used as self-prescribed medication to the eyes just as a wash, and in one to lessen the fatigue from presbyopia because glasses were not desired. There would seem to be no predilection for the silver salts to stain the eyes of women over that of men only that womankind has a penchant for using something in the hope of getting cosmetic aid—and in such cases with disastrous cosmetic results.

Despite the fact that ophthalmic literature gives generous warning of the danger of argyrosis from the indiscriminate use of argyrol, protargol and silver nitrate in the eyes, especially in those cases of tear-duct obstruction in which the conditions is most liable to occur, these drugs continue to be prescribed without due warning to the patient. Cases are cited of physicians having been sued by patients who developed argyrosis following the prescribed use of silver salts. Recent ophthalmic literature interdicts the use of these salts on prescription to be used by the patient at home. Argyrosis has been reported to have developed in the conjunctiva in susceptible individuals following a few administrations of these salts, and frequently when used several times daily over a period of two weeks.

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GLYCOGEN-STORAGE DISEASE OF THE HEART

(B. J. Walsh, Washington, in *Med. An. D. C.*, Aug.)

Atkinson in 1939 listed 59 certain cases of glycogen-storage disease which had previously been reported, 12 of which were shown at postmortem examination to have chiefly affected the heart.

The cause is unknown. In those cases involving the heart, death occurs in the first few months of life, sometimes suddenly, but commonly as the result of intercurrent infection.

Glycogen-storage disease of the heart is difficult to recognize clinically. The usual diagnosis made during life in the reported cases is congenital idiopathic hypertrophy.

In some cases there is a low fasting blood sugar and failure of the blood sugar to rise after the injection of epinephrine. Also there has usually been ketonuria.

In at least 2 of the reported cases, a loud harsh systolic murmur loudest at the cardiac apex has been described.

UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

UROLOGIC HINTS[1]

THE PURPOSE of this paper is to direct attention to observations which we hope may be of value in the diagnosis and treatment of certain urologic affections.

Non-specific urethritis, discharge in which no gonococci can be found, is usually due to a small meatus or to one or more strictures of the urethra. Treatment, therefore, should be directed toward these common causes and meatotomy should be done and urethral strictures dilated. Merely to prescribe astringent injections is a waste of time. The establishment of an adequate channel-way and suitable sulfonamide medication will usually afford lasting relief.

Chronic prostatitis often is perpetuated by the presence of a smal meatus or urethral strictures. If prostate massage administered every five to seven days does not soon improve the symptoms and the patient's sense of well-being, bulbs should be employed to determine the adequacy of the urethral passage-way.

Occasionally chronic prostatitis is kept up by unusually large ducts from the glands of the prostate or from cavities resulting from previous prostatic abscesses. These are readily recognized by cystoscopic studies with the McCarthy panendoscope.

Pain in the lower part of the back in the male, in more than half of the instances, will be benefited by massage of the prostate and dilation of the urethra. This result follows whether or not the prostate secretion shows pus.

Sexual impotence responds well to dilation of the urethra and instillation of nitrate of silver, 1-2 per cent to 2 per cent. The sounds should be left in the urethra for ten minutes each time and the treatments repeated about once a week.

Bed-wetting in children, boys or girls, usually yields promptly to the establishment of a normal urethral passageway by meatotomy and the introduction of bougies or sounds. A small percentage of bed-wetters will require the instillation of nitrate of silver, 1 per cent, gradually increasing to

1. BALLENGER, E. G., *et al.*, Urologic Hints. *The Urologic & Cutaneous Review*. August, 1942.

2 per cent. The dilations and instillations should be administered once a week.

Bacteriuria, is persistent or recurrent, needs a search for its source and cause. Stasis and stones are the usual causes. Failure to recognize bacteriuria is due not infrequently to delay in making the microscopic examination. The urine often is allowed to stand in a warm room until the bacteriuria is considered as due to contamination after it was voided.

Blood in the urine should be regarded as a red flag warning of danger. If this warning is heeded early, many lesions which cause hematuria may be cured by minor measures. When long neglected, however, many of these lesions may not be curable even by major measures. The usual causes of blood in the urine are tumors, stones and obstructions. The amount of bleeding is not a criterion of the danger. Small papillomas of the bladder often bleed more profusely than cancers.

The so-called essential hematuria, bleeding from a kidney when no abnormality can be found *after careful study,* will usually respond to dilation of the ureter. Several treatments two weeks apart may be required. The catheters should be left in for 24 hours each time.

Back pressure from obstruction at any point below the kidneys may cause damage to renal function before tube casts or albumin appear in the urine. Moreover, in all probability, such obstructions increase the likelihood of acute nephritis from acute infections occurring elsewhere in the body. The subsequent persistence of chronic nephritis is increased by failure to suspect and to correct the obstructions.

Cystitis and cystitis-like discomfort in women yield much more promptly to dilating the urethra with sounds than to vesical irrigations. Dilating sounds of larger and larger size should be introduced once a week, until a caliber of 30 or 32 is reached. Meatotomy is often required to permit the use of sounds of adequate size. Sulfathiazole or sulfadiazine, 30 grains daily, after meals, should be employed, when pus is found in the urine, to supplement the urethral dilatations. In case relief is not obtained with reasonable promptness it should be assumed that the cause of the pus is a lesion in the bladder or kidneys and suitable studies should be made.

Vesical-neck obstructions in the elder man should be suspected when there is a *lack of force* in the urinary stream, when there is *slowness in starting* to urinate, especially early in the morning, and when there is *undue frequency* in getting up to void at night. Such obstructions may be valve-like formations, fibrous contractions, or prostatic enlargement. The pathologic process may be benign or malignant. The degree of obstruction and the hardness of the prostate, not its size, are the significant factors to consider in making the diagnosis. Carcinoma of the prostate has a characteristic hardness as readily recognizable as is cancer of the breast. Examinations should not be regarded as complete until the prostate has been palpated. By such examinations the feel of the normal prostate is soon acquired. Abnormalities then may be easily noted.

If doubt is experienced as to whether or not the vesical neck is obstructed, valuable information may be obtained by the administration of phenolsulphonephthalein intravenously. If 25 to 30 per cent can be voided in the first 15 minutes and 15 to 20 per cent the second 15 minutes, it may be regarded as adequate evidence that there is no residual urine and no serious renal damage from back pressure. By such tests useful leads as to the diagnosis may be obtained without so much as the passage of a catheter. When the output of 'phthalein is below normal, the cause of the deficiency should be sought.

Pyelitis, chronic or recurring, like non-specific urethritis and cystitis, should be regarded as infection induced by *obstruction at the renal pelvis,* in the *ureter* or in the *lower urinary tract.* When suitable sulfonamide preparations fail to clear the urine or if improvement is only temporary, obstructions should be considered as likely primary causes.

Pain in the region of a kidney usuall means that the ureter on that side is obstructed. Reproduction of the pain, or its intensification, by injection of normal saline solution into the renal pelvis through a ureteral catheter confirms such a diagnosis. In this manner appendicities as the cause of the pain is excluded.

Nature's defensive measures are remarkably effective in the control of many urinary infections when not working against the handicap of obstructions which hinder drainage. We should not expect the unreasonable but remove the factors which cause statis, then the combined effect of natural defensive agencies and chemotherapy can be depended upon to bring about lasting cures.

In concluding it is hoped that the foregoing remarks have made it evident that *chronic* or *recurring* urinary infection is largely a plumbing problem—to establish an adequate channel-way,—or a problem presented by a diverticulum cavity or stone in the urinary tract as the retarding factor in the eradication of the infection.

THE ORAL ADMINISTRATION OF A MERCURIAL DIURETIC IN CONGESTIVE HEART FAILURE

(K. L. Kickens in *New Orleans Med. & Surg. Jl.,* Jan.)

Each tablet contains 80 mg. salyrgan and 40 mg. theophylline. Patients with congestive heart failure are treated by complete bed rest, digitalization, sedation, fluid limita-

tion (1 qt. daily), salt-free diet and 3 Gm. ammonium chloride daily for three days. After this a single dose of five tablets orally after breakfast and repeated after 4 to 6 days as indicated. In all patients there was a satisfactory increase in urinary output—900 to 2,225 c.c. daily. No ill side-effects were noted even after three doses of the drug. The contraindications are the same as for any mercurial preparation.

HOSPITALS

R. B. Davis, M.D., *Editor*, Greensboro, N. C.

HOW BADLY DO PATIENTS WANT TO PAY

This is a subject frequently uppermost in the minds of hospital Trustees and Directors and constantly the problem of hospital business offices. There are many factors to be carefully considered in getting patients to pay their bills more promptly.

First, very few patients determine before entering the hospital to beat the hospital out of its money. However, there are a goodly number whose determination to pay dwindles as the account grows older. Most hospitals have found it necessary to have a ruling to collect weekly in advance. Very few hospitals are able to carry this ruling out in half of the cases. Even so, the effort put forth by the Trustees and the Directors and the pressure brought to bear upon the collection department of the hospital has helped enormously. A person can often pay a bill contracted 10 days ago but after 30 days it becomes an impossibility. Some other cause will have taken the money—a vacation, a new automobile tire, cost of repairing a fender, or a trip on the train.

There ought to be two separate and distinct classifications of the ease of the methods in which a hospital bill is taken care of. One should be spoken of as the "before" method and the other should be called the "after" method. The "before" method, which is payment in advance, is the Millennium for the hospital business manager. The patient and the public are all satisfied. It is not difficult to nurse the patient back to health. It does not seem ages to the patient from the time he rings the bell until the nurse arrives to answer it; the food tastes much better than it does when the other system is used. It is absolutely marvelous how a person feels justified in telling the business manager that he cannot pay his bills in cash, but can find money when they are told that the service is not available except on a cash basis or that the cash basis is 10 to 20 per cent cheaper to them because it costs the hospital on an average of so much for each dollar put on the book. Where they get the money is sometimes a mystery but that same individual frequently would never be able to get the money under any other circumstances when the "after" method is used.

The "after" method, of course, means that the bill is paid after the service is rendered and either a patient must be absolutely honest or the business manager must be a financial wizard if this method succeeds. In many cases, the combined efforts and honesty of both parties still leaves thousands of dollars unpaid each year on a great many institutions' books. I know of one small institution that charged off $35,000 in the period of three or four years, and in this instance, the "after" method was the custom. There is an old saying that "money makes the mare go." This was true when this old adage was started and will be true when "Gabriel blows his horn." Even the church itself cannot operate without money and certainly a hospital, whose very existence creates an expensive institution, cannot exist without money. If one is expecting to collect a reasonable number of his bills on the "after" method, I would advise him to deal only with people whose credit is solvent, for otherwise, the institution will end up in the red.

The enumeration of errors and defects in hospital management does no good except to call attention to the need for a remedy. First, and most important, it is to obtain the coöperation of the staff. This should be done by discussing the needs frequently at the staff meetings and at the same time, individually with members of the staff who persist in sending patients in the hospital, telling them that the hospital will trust them for the bill. As a rule, this type of staff member tells a patient that because he wants to take the $50 to $150 in cash that the patient has at the time he enters the hospital. We cannot blame the doctor for wanting to collect his bills and as many as possible in advance, but we should not be subjected to the wrong propaganda in order to further his interests. A doctor should tell his patients that hospital bills are payable weekly in advance and that not he but the hospital business office handles the hospital accounts. The patient should understand from the doctor that any deviation from the advance method will have to be settled at the hospital business office. If the doctor persists in telling the patients that they can get credit at the hospital, and especially those who cannot get credit elsewhere, then it would become absolutely necessary for the hospital to strictly enforce the payment weekly in advance for all that doctor's patients. Here is where the shoe pinches the doctor. His pay patients will then complain bitterly when the hospital office insists that they pay weekly in advance simply because their doctor insists upon sending so many patients in the hospital who have not paid their hospital bills in the past.

The next step is with the business office personnel who should be told to be courteous, sympathetic and indulgent toward the person trying to arrange

payment of a hospital bill; but everyone of them should understand that the Board of Directors' ruling is to be kept constantly before the person who wants consideration about a bill. It is not the part of the business office to dictate policies about collecting bills. The office should carry out those policies. I should not wonder if the sums collected weekly in advance would not be a great deal larger if there was a commission attached to the salary of the member for cash collections.

After taking care of the staff and the collection personnel, it yet becomes necessary to educate the lay public that no longer can hospitals compete with other hospitals in salary, maintenance equipment, and erection, unless they collect their bills. The public should also be advised frequently that the hospital is an asset to the community, and that being an asset, is a help to them when they are in urgent need of a service that cannot be rendered in any other institution in the community. If this were constantly kept before them, they would finally recognize the importance of the location of a hospital in their community. Few farmers, even, will object to paying 10 cents for a five cents ice cream at the county fair, the need is urgent and it is worth that price to them at the time. Pink lemonade has always sold for more at the circus than it would in town, yet all are happy and smiling as they gather around the stand waiting their turn. This is because the public has been taught that they cannot get the same amount of pleasure, enthusiasm and thirst at the corner drug store or at the filling station that they can get at the circus or the fair. If this psychology were properly applied and the propaganda properly administered to the public, they would feel the same way about hospital bills.

Now to offset the argument of those who would have condemned the strict collection of hospital bills a few years ago, we have hospital insurance. We do not demand of the public more than they are able to pay. If they will use the opportunities that the hospitals and the medical profession have put in their reach, even the most poverty-stricken could provide for the rainy day by carrying hospital and sickness insurance. I say to the business managers of the hospitals, demand your money and everybody concerned will respect you; but if you take the "after" method, your Board of Directors will soon be tired of the red figures presented at their meetings and the ever-increasing complaining public will find fault with you because you did not lend them your salary as well as trust them for the hospital bill.

FROZEN FEET

(Edi., *The Lancet*, Jan. 10th)

The incidence of frozen foot fell rapidly in the last war with the institution of foot-drill, with careful attention to drying of socks, boots and gum-boots, and draining of trenches. Systematic inunction of whale-oil was also found of great service.

Do not rub the part with snow. When foot or hand goes numb, warmth should be applied, never greater than body heat and *without friction*. If the circulation does not return, dry and wrap up the affected limb, give it absolute rest, warm the patient himself with hot drinks and adequate clothing, but do not use the excessive warmth of a hot cradle.

No matter how alarming the limb may look it is never right to amputate at once. There have been instances in which the feet were black and hard above the ankle and the patient escape with no more than the loss of a few phalanges. Spreading sepsis may require early amputation, but where the gangrene is dry, as it usually is, a line of demarcatiton should be awaited.

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

TREATMENT OF ACUTE CRANIO-CEREBRAL INJURIES

WE HAVE made a lot of progress in the quarter century just past in the care of injuries to the head and its contents. Much of that progress consists of learning not to do things to such a patient—the *non nocere* of the wisest of our ancestors in medicine.

Here is brought you in abstract an excellent dealing[1] with this live subject.

Shock, if present, must be treated immediately before any further examination or procedures are carried out. External heat is best applied with a heat cradle but one must take the temperature frequently and, if it goes above 99° F. rectally, the heat should be discontinued as occasionally the thermoregulatory center may be injured and the patient will run an alarming fever. In such case it is wise to give ice water enemas, alcohol rubs and apply ice bags over the carotid, axillary, femoral and popliteal arteries. This being done of course after the patient has recovered from the initial shock.

Fifty c.c. of 50 per cent glucose is given immediately. If there is no improvement in 10 minutes 250 c.c. of saline is given every hour until the pulse is less than 120 and the systolic blood pressure greater than 90 mm. Voris advocates the use of 10 per cent glucose instead of the saline. For excessive perspiration 15 min. of surgical pituitrin every half hour and 1/100 gr. of atropine every hour. If bleeding the hemorrhage is controlled and if necessary arrangements made for a transfusion. Make sure the patient has an adequate air way. Also if patient is unconscious give 10 per cent carbon dioxide in 90 per cent oxygen. The patient usually reacts from shock in 15-60 minutes under this form of treatment.

1. E. W. Shannon, Cleveland, in *Ohio State Med. Jl.*, Aug.

As a stimulant caffeine-sodium-benzoate is the drug of choice. Keep as quiet and restful as possible, no undressing, examining or washing.

In a scalp wound shave the area from a radius of 2 in. from the edges, clean the shaved area thoroughly with soap and water, avoiding the wound; apply 0.3 per cent iodine to the cleaned area. Sterile gloves are now put on and the laceration blocked with 0.1 per cent novocaine. Then thoroughly clean the wound with soap and water, change gloves and palpate the wound with a finger for fractures or foreign bodies; if there is no fracture all the devitalized tissue is removed and the wound closed with silk, suturing the galea and skin separately. *Many* give all patients with open wounds tetanus antitoxin and gas-gangrene antitoxin; *most* if the wound is obviously contaminated or if it was received where there was soil about. The sulfonamide drugs may be packed into the wounds but it is best to prevent the powder from coming into contact with the skin.

In all cases of basilar fractures with rhinorrhea or otorrhea of cerebrospinal fluid the patient should be immediately started on sulfapyridine; the pneumococcus is the most frequent invader. If blood coming from either or both ears there should be no attempt made to clean, wash or examine the ear. In rhinorrhea the patient should be told the importance of not blowing his nose as infection may be forced up through the cribriform plate.

On admission to the hospital the wound is palpated by *one person* who is responsible for the diagnosis, and if there is a compound fracture no attempt is made to clean the wound but it is covered with sterile gauze and left that way until the patient is operated on. Shock is treated and that is all that is done except possibly for hypertonic glucose or lumbar punctures. The patient is not operated on before 24 hours regardless of his condition. The operation may be safely delayed for as long as 48 hours; if it is not done within that time, it should be deferred for three to six months. In extradural hemorrhage operate immediately.

Nonoperative treatment should be used in 70 per cent of all craniocerebral injuries, and this group is composed of concussion, congestion and edema, and contusion and laceration.

In concussion there is apt to be some degree of unconsciousness, but no residual symptoms. The patient should be observed for at least two hours and not be left alone for at least 24 hours. Of edema ond congestion a typical history is that of a blow followed by unconsciousness, and when recovered, headache, dizziness, nausea, confusion, loss of memory and maybe convulsions. The cerebrospinal fluid pressure will be above normal, but is normal as to cell count and chemistry and is free of blood. Therapy: 1) limit fluid intake to 1000 c.c. per day; 2) intravenous use of hypertonic solutions; 3) magnesium sulfate enemas, and 4) lumbar punctures.

The use of lumbar punctures is not accepted by all. If used the patient should always be recumbent, and the head not flexed as this might compress the jugular veins and cause abnormally high pressure. Contraindications: 1) pimples, acne or infection in the lumbar region, 2) shock, 3) uncooperative patient, and 4) irregular respiration or a respiratory rate below 16. The number of punctures depends on the response, may be done every six hours. They are discontinued when there are two normal readings 24 hours apart. Aspirin and several ice bags to the head combat headache.

Contusion and laceration of the brain cause increased cerebrospinal fluid pressure and the fluid is bloody. The clinical signs are unconsciousness which may be prolonged, loss of sphincter control, respiratory distress, delirium, convulsions, disorientation, nausea and vomiting, retrograde amnesia, somatic or cranial nerve palsy, along with disturbed reflexes. The treatment is the same as that for edema—judicious dehydration and the use of lumbar punctures. The patient should be closely observed and a chart kept of the vital functions. It is a good idea to arouse the patient every hour and in this way the patient is not likely to slip off into coma without the doctor becoming aware of it.

Morphine is absolutely contraindicated in head injuries where there is increased intracranial pressure.

The odor of liquor on the breath should make no difference in the treatment. If unmanageable paraldehyde should be given as it has a wide margin of safety and is rapidly excreted.

Subdural and extradural hemorrhage are the two types which necessitate operative interference —in 12 per cent of *all* craniocerebral injuries: 2.5 per cent of head injuries have *extradural* hemorrhage. The diagnosis is difficult and is made by close observation of the patient.

PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor*, Greenville, N. C.

MILESTONES IN NORTH CAROLINA PUBLIC HEALTH

(Continued from last month)

1930—This year marked many significant changes in the affairs of the State Board of Health. Early in the year Dr. C. N. Sisk, Director of County Health Work, resigned. Dr. D. A. Dees succeeded Dr. Sisk. Dr. F. M. Register, director of the Bureau of Vital Statistics, resigned, and the work of that bureau was assigned to Dr. G. M. Cooper, in connection with his work as director of

health education. On August 26th, Dr. Chas. O'H. Laughinghouse, State Health Officer, died. Soon after his death, in a meeting of the Board, Dr. H. A. Taylor was made Acting State Health Officer. On Sept. 24th, the Board elected Dr. W. P. Jacocks State Health Officer to succeed Dr. Laughinghouse. On November 20th, Dr. Cyrus Thompson, for many years a member of the Board, died. On December 16th the Board met and unanimously elected Dr. James Parrott, of Kinston, as a member to succeed Dr. Thompson.

1931—At the beginning of this year, Doctor Jacocks having declined to accept the position of State Health Officer, a bill was introduced in the Legislature abolishing the State Board of Health as then constituted.

The important provisions in the new law under which the Board of Health work is now operating are as follows: The Governor still retains the power to appoint five of the nine members of the Board, the maximum term of office being four years instead of six, as under the old law. The Medical Society of the State of N. C. still retains the power to elect four of the nine members of the Board, the same conditions as to term of office to obtain here as in those appointed by the Governor. It was recommended to the Governor, although not written into the law, and Governor Gardner accepted the suggestion, that he appoint one member from the State Dental Society and that he appoint a man recommended by that society. This is equivalent to allowing the State Dental Society to name one of the members, but still leaves the balance of power in the hands of the Governor. This seems to be a very satisfactory arrangement.

Another important change is that the Board still elects the State Health Officer, but it can become effective only upon the approval of the Governor. The term of the State Health Officer, along with members of the Board of Health, was restricted to four years.

On May 28th the new Board met and organized. On that day it unanimously elected Dr. James M. Parrott State Health Officer. Dr. Parrott took the offer under consideration for a period of two weeks. On June 11th the Board met again; Dr. Parrott accepted the election and agreed to assume office on July 1st. Dr. Parrott resigned his membership on the Board before being elected to the position of State Health Officer, and under the provisions of the new law the executive committee of the State Medical Society selected Dr. G. G. Dixon, of Ayden, to serve in Dr. Parrott's place until the 1932 meeting of the State Medical Society.

The Board reorganized the work into divisions, making many consolidations and increasing the duties of the director of each division. Following are the divisions organized: Administrative Officer, Dr. James M. Parrott; Director Division of Preventive Medicine, Dr. G. M. Cooper; Director Division of Oral Hygiene, Dr. Ernest A. Branch. The division of County Health Work and Epidemiology was temporarily assigned to Dr. H. A. Taylor, but on August 3rd Dr. Taylor resigned and Dr. John H. Hamilton, Health Officer of New Hanover County, was made Director of this Division. The position of Director of Division of Sanitary Engineering was filled on July 14th by electing Mr. Warren H. Booker.

The tlestion of Dr. Parrott was received with enthusiasm throughout the medical and public health circles of the entire state.

(To be continued)

OBSTETRICS

HENRY J. LANGSTON, M.D., *Editor*, Danville, Va.

WHAT TO DO FOR THE PREGNANT WOMAN WITH SYPHILIS

IF EVERY PREGNANT WOMAN WERE GIVEN A BLOOD TEST, the amount of congenital syphilis in the United States could be reduced nine-tenths. This is the keynote of a valuable article[1] here given in abstract.

Treatment during pregnancy is for the child and not for the mother. Since no evidence of syphilis pathology has been found in any fetus under five months, the aim is to prevent infection of the fetus; after the fifth month the spirochete invades the fetus and treatment is to effect a cure of the syphilitic fetus. Give neoarsphenamine or mapharsen alternating or in conjunction with bismuth subsalicylate. Plan treatment so that it starts and ends with neoarsphenamine of mapharsen. Treatment must be continuous until time of delivery. No rest periods. Pregnant women tolerate treatment well. A urinalysis should be made every week, the sclerae should be watched and the blood pressure taken at regular intervals. Before each arsenical injection, the patient should be questioned whether the last injection produced any itching or eruption of the skin. Do not fear miscarriages or

1. L. J. Roth, Columbus, in *Ohio State Med. Jl.*, Jan.

abortions from treatment; continue treatment for the cure of the mother after delivery.

For a woman one- to five-months pregnant, with a positive blood test, infection rather recent, weight 100 to 120 lbs., urine, sclerae and blood pressure normal, treatment should be neoarsphenamine 0.3 Gm. intravenously and 1 c.c. bismuth salicylate intramuscularly each week for 10 weeks. The neoarsphenamine and bismuth may be given on the same day or three days apart. If no reaction occurs after the third injection of neoarsphenamine the dosage may be increased to 0.45 Gm. each week. Starting the eleventh week, the patient should receive injections of bismuth only for the next ten weeks. Bismuth is then discontinued and 0.45 Gm. neoarsphenamine is given for the following ten weeks. This alternating type of treatment is continued until delivery.

For the patient who weighs more than 120 lbs. start treatment with 0.45 Gm. of neoarsphenamine; for the obese and not very muscular patient be careful about increasing the arsenical dosage, as this type of patient is more prone to reactions. If patient is muscular and weighs 150 pounds or more, the dosage of neoarsphenamine may be gradually increased to 0.6 Gm. For patients having a history of syphilis for five years or more, start treatment with a series of ten weekly injections of bismuth, to be followed by ten weeks of neoarsphenamine. This alternating type of treatment should be followed until time of delivery.

If we watch the sclerae for jaundice we may prevent extensive liver damage by immediately discontinuing all drugs. By testing the urine for albumin every one to two weeks we may save the kidneys from unnecessary damage by discontinuing bismuth. By taking the blood pressure every week we may prevent some cardiovascular accident by reducing the dosage or discontinuing the neoarsphenamine or mapharsen entirely. A severe exfoliative dermatitis is often prevented by discontinuing all arsenicals when an itch or body eruption begins to manifest itself.

There is one rare and severe complication—hemorrhagic encephalitis—to which the pregnant woman is more susceptible. The symptoms resemble the toxemia of pregnancy—first sign headache, followed by convulsion, which may be preceded by apathy or mental confusion. Convulsions increase until the patient becomes comatose, with loss of sphincter control. Just before death the temperature may reach 106-107°. Autopsy usually shows a severe edema of the brain and punctate hemorrhages. Give no drugs if headache is complained of; for convulsions, spinal puncture drainage at least 50 c.c. of fluid; 1 c.c. adrenalin subcutaneously every four hours, venesection 60 to 100 c.c. are recommended. Bicarbonate of soda is given in large doses; for the anoxemia of the brain inhalations of oxygen.

ORTHOPEDIC SURGERY

SHOULDER PAIN

A LOT OF PATIENTS come complaining with shoulder pain. Few get diagnosis or treatment satisfactory to patient or doctor. Here are some pointers from a promising article.[1]

Of 159 cases of shoulder pain without radiologic evidence of fracture, dislocation or gross disease three groups were classified as a) subacromial bursitis; b) clacified deposits; and c) rupture of the short rotator tendon.

In acute bursitis the pain centers around the shoulder and may radiate to the occipital region and to the fingers, which feel swollen and stiff. When the bursitis subsides the referred pain retraces its course and may localize at the deltoid insertion. The pain is worst at night, and may be so severe that large doses of morphine have little effect. In the severe cases, marked atrophy of the deltoid and scapular muscles occurs. The joint capsule may be tender on palpation. Radiologic examination usually shows a decalcification most marked in the greater tuberosity. The head of the humerus is held high in the glenoid in the severe cases.

After a period of rest, with heat and sedatives, the affected shoulder is manipulated. If movement increases pain the manipulation has been instituted too soon, and a further period of rest is enjoined. The author, after a thourough injection of the bursal area with from 50 to 60 c.c. of 0.5 to 1% novocain, manipulates the shoulder throughout its full range; then 20 minutes of diathermy. In some of the worst cases with intense suffering and lack of sleep, a single treatment has given sufficient relief to make sleep possible. The electric pad is used continuously at its lowest temperature. Massage, faradism to wasted muscles, and resistance exercises are also employed. Splints and slings are rarely used. Aspirin is ordered as indicated. In the worst cases treatment for six weeks is usually required.

Cases characterized by calcified deposits of the rotator tendons are treated the same as cases of subacrominal bursitis, with the addition of removal of the calcium deposits under local or general anesthesia.

Ruptures of the short rotator tendon usually occur in patients in middle life, who, after a strain from lifting, or from a fall, feel a snap in the shoulder, with severe pain, followed by muscle

1. H. C. Moseley, Montreal, in *Canadian Med. Assn. Jl.*, April

spasm. In mild cases, abduction to 70° may be possible without suffering, but as the area of the lesion passes under the coracoacromial ligament, severe pain is felt which disappears at 110°, to return over the same range in adduction. The area of the lesion is tender and there may be pain referred to the insertion of the deltoid. Röntgenologic examination discloses a highly placed humeral head but is otherwise negative. The full movements can be carried out, however, by injecting novocain into the tender area or by preventing impingement of the head of the humerus on the coracoacromial ligament by the relaxed-muscle position or the depression-of-the-head test.

It is best to operate in cases of doubt, as complete rupture without operation usually ends in stiff, weak and painful joints.

In the partial ruptures, novocain infiltrated into the affected area will restore full painless movements with disappearance of the muscle spasm. In the majority of cases, the pain is permanently lost to the extent of 30 to 60% and in some instances the one injection removes the pain permanently and entirely.

In complete ruptures, novocain injection will often relieve all pain and muscular spasm. Some gentle massage or manipulation may be necessary.

An adherent subacromial bursitis organizes from the tearing of its base. Abduction and rotation are greatly limited but this loss of motion is obscured by the movements of the scapula. The treatment of these cases by strapping, Velpeau bandage or the sling position predisposes to poor result.

In recent partial ruptures, the author gets immediate full range of movement by the relaxed-muscle position or by manipulation with massage, novocain and diathermy for control of pain. The time for complete relief is roughly three weeks. In old partial ruptures of the short rotators the principle of treatment is movement. Application of heat, massage, faradism, novocain to the scarred area and stretching even under gas anesthesia will restore the majority of these cases to normal in three months.

In recent complete ruptures the principle of treatment is accurate suture at the earliest moment, followed by rest for three weeks; then active, gentle movements and heat, massage and faradism to the shoulder muscles.

In the cases of complete rupture where suture has not been possible, satisfactory shoulder function can be obtained by early movements and strengthening exercises under careful supervision.

Sensitiveness to a Mercurial Diuretic.—A case has been reported of toxic manifestations after the administration of even a *very* small dose of mercupurin, whereas to the continued administration of other mercurial diuretics in that same case the reaction was slight or negligible.

INTERNAL MEDICINE

George R. Wilkinson, M. D., *Editor*, Greenville, S. C.

DIABETIC COMA

The death rate from diabetes remains about where it was before the advent of insulin. This is largely because of too much faith in insulin causing neglect of tried measures, and because of poor use of insulin.

None can speak with more authority than can Joslin.[1]

In diabetes it is imperative that the patient be fully informed regarding his disease. In a simple way he must be taught all that is known regarding the treatment of the condition and of complications which may arise. He must know how to test his urine and must be impressed with the importance of testing at home *at frequent, regular intervals.* He must know how to give his insulin doses accurately and well. He must know how to weigh or measure his food and to substitute one food for another and must be impressed with the great importance of following his diet closely. He must be taught to keep in close touch with his doctor, so that from time to time a more detailed estimate of his diabetic control may be made and he may be given the advantages of new features in treatment as they present themselves.

A patient with diabetes seen in diabetic coma is proof that some one has blundered and, if death due to the diabetic coma occurs, the rule still holds.

Diabetic coma is an acute deficiency state, a condition in which the primary disturbance is a lack of insulin. *Its correction demands the prompt and energetic use of large amounts of insulin.*

The first dose of insulin, subcutaneously, for the average patient is 50 units. Particularly if the patient is unconscious and in shock, an accompanying dose of the same size is to be given intravenously. In an average case a second like dose is given one-half hour later. In the usual case at least two other doses of insulin of 50 units will be necessary at half hourly intervals. The average patient requires about 200 units within the first two or three hours of treatment. At the end of this time another sample of blood should be taken for determination of the sugar and carbon dioxide content; these values will serve to guide as to whether treatment should be pushed more or less energetically. If despite the large initial dose of insulin the blood values have shown little or no tendency to return toward normal, even larger doses of insulin should be given more frequently. Thus at times it may be necessary to give as much as 100 or more units of insulin at half hourly or hourly intervals.

1. E. P. Joslin, et al, Boston, in *Jl. A. M. A.*, Aug. 18th

If satisfactory return of the blood toward normal has begun, less energetic measures may be employed. As the patient's condition improves, the interval of collection of specimens and the giving of insulin may be increased to every two and later to every three or four hours.

Aids in treatment are a) large amounts of fluid and sodium chloride, b) gastric lavage and c) in cases of significant peripheral circulatory failure, constant intravenous infusions of salt solution together with the use of transfusions of plasma or whole blood in some cases to restore blood volume.

In a series of 525 cases of coma observed from May 1923 to Jan. 1st, 1942 there were 58 deaths, a case mortality of 11%.

No death has occurred among 62 successive cases treated between August 1940 and July 15, 1942.

Alkalis are not used. Dextrose is not given parenterally in the early hours of treatment.

DECHOLIN WITH MERCURIAL BEST DIURETIC

All of us want to keep right up with advances in knowledge of dealing with dropsy. Here is enthusiasm[1] for a combination new to me.

A complete physical examination is made and blood studies are done.

If there is any evidence of a fluid deficit and the edema is not due to a frank nephritis and if the specific gravity of the urine is at least 1.015, 5 c.c. of decholin sodium and 1 c.c. of mercupurin or salyrgan are given intravenously at once. The decholin sodium immediately changes the blood pH to the acid side, has a stimulating effect upon the congested liver and enhances the diuretic effect of the mercurial.

If there are no untoward effects from this dose, 10 c.c. of decholin sodium and 2 c.c. of the mercurial are given on the second day and this procedure is repeated every fourth day as long as is necessary.

After the edema is entirely removed, the same dose is repeated at weekly intervals or as often as the condition warrants to keep the patient in circulatory balance. Digitalis in suitable doses is also given to tone up the heart muscle.

Albumin and casts in the urine are not contraindications, if the specific gravity remains above 1.015. Usually the removal of the renal congestion will clear up the albumin and casts.

Before the patient is discharged, he is told of the importance of keeping up the digitalis as directed, and urged to report back to the clinic as soon as any of his former symptoms appear.

Congestive heart failure is an emergency disease and must be dealt with accordingly.

The most important initial step is to get rid of the excessive tissue fluid as quickly as possible.

Decholin sodium combined with a mercurial gives quicker, better and more lasting results than any other diuretic.

If congestive heart failure cases are followed up they can be controlled and helped to live a long time.

If one waits until pitting of the ankles and rales at the lung bases appear, much valuable time has already been lost.

PEDIATRICS

Edwin L. Kendig, Jr., M.D., *Editor*, Richmond, Va.

SIMULTANEOUS ADMINISTRATION OF DIPHTHERIA TOXOID AND PERTUSSIS VACCINE IN YOUNG CHILDREN

An advance in our routine immunization of the children under our care can be made by protecting them against diphtheria and whooping cough at the same time.[1]

A group of 208 children were injected simultaneously with the 15,000 million per ml. vaccine (2, 2, and 3 ml.) and in the same arm with diphtheria toxoid (1, 1, and 1 ml.) at 3-week intervals. A group of 256 children were injected with the antigens mixed (15 thousand million pertussis bacilli in diphtheria toxoid.) The mixed antigens were prepared so that each dose of 2, 2, and 3 ml. equalled that when the antigens were given simultaneously. Injections were given in alternate arms at 3-week intervals as customary, just beneath the skin, to retard absorption, produce maximum response, and lessen systemic reactions.

Parents were informed that the injection might be followed by a local reaction and fever of short duration. They were cautioned not to apply any local treatment. Taking the temperature was discouraged. They were instructed to give 3 to 5 grains of aspirin if the child became restless or feverish. No instance of local infection occurred. The only interruption in the routine administration of the injections occurred in the children who contracted intercurrent diseases. Those who failed to complete the series of injections were in families who moved away.

The pertussis antibody response in both series compared favorably with the response when months intervened between the plain pertussis vaccine injections and the diphtheria toxoid injections. The Schick test as an index of protection against diphtheria was equally good in the two series. The diphtheria toxoid maintained its antigenicity when mixed with the pertussis vaccine. Synergistic action was not observed.

1. C. L. Andrews, Atlantic City, in *Jl. Md. Soc. New Jersey*, Aug.

1. L. W. Sauer & W. H. Taylor, Evanston, Ill., in *Amer. Jl. Pub. Health*

Among these children, no known instance of pertussis occurred and they were intimately exposed to the disease.

The authors' experience with mixed pertussis antigens warrants further trial on a large scale in the immunization programs of health departments and private physicians.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

SIMPLE TREATMENT FOR FRACTURED METATARSALS

QUITE A FEW fractures of the metatarsals are seen in general practice. Here are given the points of a new and simpler method[1] of treatment.

This type of fracture is usually caused by objects falling on the foot. The treatment hitherto has been a plaster boot for 3 to 5 weeks, and after this protective weight-bearing for another 2 or 3 weeks.

The method here described is applicable in fractures involving *up to 4* metatarsals, since *at least one* is needed to hold the foot in position. A transverse bar is placed under the shoe in a slightly oblique position in the direction of the metatarsal heads, 1½ inches to 1¾ inches in front of the heel. Having the patient bear his weight on his foot in a shoe over a broom handle, the proper location for the bar is at that point in front of the heel where there is practically no pain on weight-bearing. The bar must be high enough so that the ball of the foot will not touch the floor.

The ideal bar can be made from a section of an oak or maple hoe or rake handle, just the length of the width of the sole of the shoe at the point in front of the heel where it is to be placed. One side of the wooden block is flattened by simple carving. Two drill holes are made through the shoe from within, into the block, and the block is screwed to the shoe from the inside with flathead screws. After the bar is in place, it may be carved with a knife to provide uniform weight-bearing.

Weight-bearing is begun as soon as the patient is able to get a regular shoe on the injured foot (after 1 week) and he is immediately returned to work. The bar is worn for 5 to 7 weeks. The patient must wear this shoe at all times.

A modification of this transverse bar likewise should be the answer to the so-called "march foot."

All of my patients were enthusiastic about the treatment and returned to work in 10 days. X-rays showed good results in every case.

1. U. E. Gebhard, Milwaukee, in *Industrial Med.*, April 11th

ON PREVENTING RHEUMATIC FEVER BY THE USE OF SULFANILAMIDE

THE USE OF the sulfonamide drugs in the acute attack of rheumatic fever has been disappointing. Administering salicylates and keeping the patient at rest do not prevent renewed attacks, nor prevent the development of heart disease. Since the first attack of acute rheumatic fever is seldom fatal, and rarely damages the heart enough to permanently impair its function, it seemed to the author[1] important to try to prevent recurrences by preventing the antecedent beta hemolytic streptococcal infections .

In September, 1936, he selected to receive this preventive treatment a group of adolescents and young adults, each of whom had had acute rheumatic fever within three years, and observed other patients with similar histories as a control group. All had had one or more attacks of polyarthritis or carditis or both. Sixty-nine per cent had chronic rheumatic endocarditis and 33% had cardiac enlargement, but very few had definite reduction of the functional cardiac capacity.

Those treated were given sulfanilamide daily from October or November until June, the first year three 5-grain doses a day. The results that year were entirely satisfactory, but the next year the schedule was altered to two 10-grain doses taken morning and night. With rare exceptions the same dosage was given to everyone, regardless of body weight.

In the original study, 55 patients were treated thus over a total of 79 person-seasons; while 67 control patients, 32 of whom had been treated in previous seasons, were observed over a total of 150 person-seasons. The results, both as regards inhibiting the beta hemolytic streptococcus and preventing new rheumatic attacks were strikingly favorable. Colonies of hemolytic streptococcus were several times more numerous in the positive cultures of untreated than of treated patients.

None of the patients receiving sulfanilamide as a preventive suffered from any acute beta hemolytic streptococcus infection during the period of treatment. During the 4-year study, no major attack of rheumatic fever was suffered by any patient while taking sulfanilamide. In contrast, 15 major rheumatic episodes were observed among control patients in the same period, and five more control patients suffered from acute illnesses which might have been rheumatic.

Of the 25 patients given the drug in the last year of this study, 21 elected to continue it in 1940-'41, and 14 of them are still taking sulfanilamide this winter (1941-1942). Opportunity was thus afforded of observing 19 patients who had taken sul-

1. C. B. Thomas, Baltimore, in *Bul. N. Y. Academy of Med.*, Aug.

fanilamide for three or more years. Of these, 11 had taken the drug for three years, four for four years, three for five years, and one boy who was in the first group, is now taking sulfanilamide for the sixth year.

Thomas concludes that the time to inaugurate a program for combatting rheumatic fever with sulfanilamide as a prophylactic is at hand, and to postpone it until after the war would be to lose sight of the immediate importance of this public-health problem; and that an effort should be made to treat every individual who has had rheumatic fever early in the evolution of his disease with small daily doses of sulfanilamide and to continue treatment over a period of years.

Certainly, this is a convincing presentation of the working out of a means of prevention which sheds a bright light on what has hitherto been a dark picture.

INSURANCE MEDICINE

H. F. Starr, M.D., *Editor*, Greensboro, N. C.

THE AVERAGE NOT ALWAYS THE BEST STANDARD

Much can be said in favor of the *average*, using the term to signify the mean sum or amount, or ordinary rank or degree. In politics the average man who does the voting is, of course, "tops". In life insurance the average result tells the tale of success or failure and the law of averages is treated with profound respect—and rightly so. Also, the average is not without prestige in clinical medicine. The table of average height and weight for children and grown-ups, the average pulse rate per minute, and the average blood pressure readings at different ages are generally regarded as highly desirable and often used as standards of perfection. In health matters a great amount of anguish has been caused by the discovery that this or that individual shows some departure from the average. Standards based on the average are useful, but we must not lose sight of the fact that in order to have an average there must exist among the units used to determine the average some which are better than and some which are not so good as the average. In medicine, the average is not always the best or the most desirable.

This is well brought out in a consideration of body weight and its effect on mortality. Average weight is often regarded as standard weight. But the average weight is not that of the most favorable mortality. Below age 35 it is favorable to weigh more than the average, but after age 35 it is favorable to weigh less than the average. This insurance experience tells us. The lowest mortality for applicants ages 20 to 34 is found in the group 15 to 20 pounds above the average weight, and for those ages 35 to 49 the lowest mortality is in the group 5 to 10 pounds under the average weight. For ages 50 and over, the under the average weight group shows the lowest relative mortality. The average weight according to age as shown by the tables is not therefore in every instance the most desirable weight.

In the mater of height, the average is not the most desirable as far as longevity is concerned. Short men have the most favorable mortality up to age 50—better than those of average height—while tall men have the worse mortality. After age 50, the tall men show up better.*

The average pulse rate in the adult is 72 or thereabouts. The pulse rate varies greatly in different individuals and under different circumstances in the same individual. The rate may vary from 50 to 90 and the circulation be normal. A constantly slow pulse rate in a normal individual is more favorable to longevity than an average or rapid rate. Heart-block of any degree; frequent missed-beats due to extrasystoles; myocardial weakness; toxic causes such as digitalis, lead poisoning or uremia; intracranial pressure and vagus stimulation due to tumor or other causes must, of course be ruled out. But where there is no pathology, persons with pulse rates under 60 have proved to be excellent risks at all ages. The reverse is true when the pulse is constantly more rapid than the average.

The average blood pressure for the different ages does not indicate the most desirable pressure. In the absence of demonstrable pathology, persons who carry blood pressures below the average are inclined to live to an old age. Insurance experience shows that the mortality of the group with systolic blood pressure 5 to 15 mm. below the average had a mortality 6% less than the average. Diastolic blood pressure 5 to 15 mm. below the average had favorable than the average**.

Summary: Attention is called to the fact that the *average* is not always the best and cannot always be used as the ideal standard. As examples of where this is true, reference is made to insurance experiences in regard to weight, height, pulse rate and blood pressure.

*Dingman—*Insurability, Prognosis & Selection.*

**Starr—*Southern Medicine & Surgery*, Vol. 104, No. 6, Page 336.

The influence of pregnancy on concurrent breast carcinoma is still in doubt, but experimental and clinical evidence seems to show that there is an accelerating tendency. Whether this accleration is due to increased hyperemia of the breast or to ovarian or pituitary factors is uncertain.

The best results probably come from treatment of the malignancy first, and the pregnancy second. It is dangerous to permit subsequent pregnancy.—Power, of Pittsburgh, in *Penn. Med. Jl.*, July.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

THE TREATMENT OF HERNIA IN CHILDREN

THE inguinal and the umbilical are the two most common of the herniae to occur in infancy and early childhood. Advice to the family regarding the treatment of hernia in children should be specific and direct so that there will be no chance of misunderstanding.

In making a decision as to the treatment of hernia even in an infant one must remember that, although some mechanical appliance may possibly hold the hernia in place, yet in a small child this would be difficult and of doubtful value, and for this reason would not be advisable.

The skin of a child will not stand much pressure and any dressing or appliancce will soon become soiled and tend to produce local irritation, possibly ulceration. So it is readily seen that any mechanical appliance for the relief of hernia in an infant or small child is of doubtful value. It may be possible to hold an umbilical hernia in place with a mechanical appliance but even here the problem is a complicated one as everyone who has attempted this will readily agree.

Our experience is in favor of radical cure by surgery of an inguinal hernia in an infant or small child.

The questions arise: Is the child able to undergo a surgical operation? Will the results be uniformly good? In our experience of twenty years we have never seen any child, even an infant a day old, injured by an operation for the radical cure of an inguinal hernia. The radical cure is fairly simple, and the tissues of the infant or young child respond kindly in healing.

Usually in doing a right herniorrhaphy I remove the appendix at the same time. In no instance have I noted any unfavorable effects from this double operation.

The danger of strangulation and even gangrene makes it important that every hernia be operated on without delay for the removal of the potential danger to the life of the child. The factor of safety in curing a hernia far outweighs any dangers that might arise from an operation.

Adhesive strapping of an umbilical hernia may prevent the intestines from slipping into the sac until a spontaneous cure occurs. Some herniae are so small that they are obviously of no great moment. Those umbilical herniae large enough to permit the intestines to slip into the sac should be repaired, especially those which have increased in size.

Our experience with radical surgical operations for the cure of inguinal herniae has been so satisfactory that we do not hesitate to advise this with assurance that the prognosis is excellent.

The injection treatment can be disposed of with the simple statement that under no circumstances should it be done. It is true that it might be successful in some cases, but the danger of permanent injury to the delicate vas deferens and to the other tissues and blood vessels in the spermatic cord is real; and the vast majority of herniae so treated would recur even if cured, and the chance of a cure is not good.

In the repair of inguinal herniae in small children it is important that the sac be located and, if possible, freed up and tied off as in adults. After the sac has been disposed of, we prefer the modified Ferguson technique in infants and small children. This does not require a transplantation of the cord, and the results are uniformly good. The delicate structures require the exercise of great care and delicacy. Whenever possible it is advisable to transplant the stump of the sac, as this helps greatly in preventing a recurrence. When anchored in position upward from the internal ring great additional strength is given to the repair and the possibility of recurrence is practically eliminated. Heretofore we have used catgut in the majority of cases. This has been satisfactory. In recent years cotton has been found to be especially satisfactory and usually gives no trouble.

For umbilical herniae there are two types of operation which give good results. However, for most of these we prefer the closure that is usually done in the high, midline abdominal incision. The umbilicus may be retained in either of these types of operation for cosmetic reasons.

Diaphragmatic hernia which may be discovered in small children may present a complicated problem. There may be a congenital opening in the diaphragm or we may have a sort of enlargement of the esophageal hiatus. A diaphragmatic hernia may occur after trauma, or may occur without any unusual event preceding the development of the hernia.

When I was an interne I saw a little boy who, while coasting, had his sled hit the end of a bridge. The boy was thrown against the bridge, but appeared not to be injured very much, although he complained of pain in the stomach. He was able to get up and go to his home nearby, did not want any supper and had a sort of grunting respiration. Taken to the hospital immediately it was found that a large part of the stomach and

some small intestine had passed through a congenital opening in the diaphragm.

A typical case in this clinic was that of a girl 11 months of age who for four weeks preceding the time of admission been vomiting, had had a slight fever and had been losing weight. At birth the child weighed 8 1-2 pounds; at nine months the weight was 18 pounds; on admission to the hospital 11 1-2 pounds. This loss of weight had occurred in the four weeks preceding admission.

The blood examination showed: R. B. C. 2,250,000, hemoglobin 50 per cent; W. B. C. 23,500—polys. 75 per cent; lymphs, 21 per cent; monocytes, 4 per cent. The Kline and Kahn tests were negative.

A fluoroscopic examination showed a diaphragmatic hernia with half of the stomach above the diaphragm and *superimposed upon the heart shadow.*

The child was given a small amount of barium meal and at the end of six hours all of the meal had passed from the small intestine into the colon.

Immediately preparation was made for operation, by means of blood transfusions and other building-up treatment, and when the general condition was sufficiently improved, under spinal anesthesia and through a left, high-rectus incision the stomach was carefully pulled down from the chest into the abdomen and the opening in the diaphragm sutured. This opening was really an enlargement of the esophageal hiatus. Closure was carefully done so as not to interfere with the esophagus. Seven days later the patient was allowed to be taken home and she has been all right since then.

It must be remembered that an acute diaphragmatic hernia, coming on after trauma or strain, or even from no apparent cause, must be immediately diagnosed and promptly and properly treated.

In the case just cited I am convinced that the baby would not have survived an operation without the careful preparation which was given before operation.

In diaphragmatic herniae which occur suddenly we usually find that the child is well nourished since the hernia had not existed prior to the time of the accident and, in a case of this kind, an immediate operation is usually necessary.

There are other kinds of hernia to be considered in making a diagnosis of an acute abdominal condition in an infant or small child. A small child developed signs of acute intestinal obstruction which proved to be due to a loop of the intestine having pased through a small congenital opening in the mesentery of the small intestine. A hernia may develop through an opening in the omentum or foramen of Winslow. Femoral hernia is extremely rare in children.

The subject of anesthesia in surgery in small children is an important one. In the child 11 months of age we used spinal anesthesia which gave complete relief from pain, practically perfect relaxation, and enabled us to do the operation with extreme rapidity and with the minimum of handling of the intestines and stomach and, consequently, the minimum of shock. I do not believe that any general anesthesia could have equalled the spinal anesthesia in this case. At the same time the child was not distressed at any time during the operation, and there were no ill effects from the anesthesia.

Ether may be given very young infants, but it must be remembered that relaxation is necessary, otherwise the repair of a hernia in a child is most difficult because of the fact that when the sac is opened the slightest strain may cause the intestines to be forced through the opening and, without good relaxation, replacement of the intestines is most difficult and may prolong the operation unnecessarily.

One of the rarest forms of hernia seen in infants is omphalocele. Here we have a rare congenital malformation in which we have a hernial sac consisting mostly of peritoneum which is not covered by skin. In such instances immediate treatment is indicated to prevent rupture and fatal peritonitis. In this case an operation should be performed without any delay—usually within a hour after birth. Herniae in infants and small children should always be kept in mind and should always be looked for when there are any signs or symptoms that may even suggest the possibility of such a condition being present.

THE ACUTE NASAL INFFECTION

(O. E. Van Alyea, Chicago, in *Neb. State Med. Jl.*, Aug.)

In the early stages of an attack of acute nasal infection the ideal treatment includes rest in bed and a warm, moist room. The symptoms should be alleviated and measures adopted which will tend to prevent complications and which may promote an early termination of the disease.

Vasoconstrictors are commonly prescribed for all stages of acute rhinitis.

A .05% solution of ephedrin in normal saline instilled with the patient in a head-low position fulfills these requirements.

Infrared rays and injections of foreign protein and vitamin C in large quantities have proved beneficial in treating patients with acute rhinosinusitis in its early stage.

RADIATION THERAPY often greatly ameliorates the symptoms in the osseous lesions of Hodgkin's disease and, in some cases, completely restores the invaded bone to its normal structure. The doses given were moderate, administered primarily for relief of symptoms rather than for restoration of bone.—J. O. Vieta, et al, in *Radiology,* July.

CLINIC

Conducted by
FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.,
High Point, N. C.

AN 18-YR.-OLD HIGH SCHOOL STUDENT consulted me June 27th, 1934, complaining of fatigue. Two yrs. ago he began to have mild fatigue with poor appetite. He kept tasting breakfast eggs all morning; also pineapple juice. He had no sour belching, no excess of gas, no nausea or vomiting. His bowels were normal. He had no sorethroat, cough, dyspnea or edema. He used to wear glasses, but does not do so now. He has headache only with eyestrain. He gets pouchy under his eyes at times, he says. Some sacral backache. No urinary symptoms.

His past history was unimportant except for severe influenza 8 yrs. ago and septic sore throat a year ago.

His habits were not remarkable. He used no alcohol or tobacco.

His height was 5 ft. 8 in., weight 118½ lbs., standard wt. 140 lbs. T. 98.9, p. 84, r. 18, b. p. 110/62. His weight has been fairly constant of late. Head negative—tonsils gut clean. Says he gains weight on cod-liver-oil tablets. Chest, abdomen and genitals negative.

Urine: Acid. Cloud of albumin (3 plus). No sugar. No casts, blood or pus.

An unusual picture—a low normal blood pressure, centrifuged sediment of the urine devoid of casts, blood or pus, yet a quite large amount of albumin in a young person calls for further study. I had him report to me the next p. m. and bring 2 specimens of urine, one collected just after getting up in the morning, and one just after a period of lying-down after lunch. Both were free from albumin; yet a third specimen voided in the office showed a cloud the same as the day before, with negative dicroscopic findings. This seemed to point quite clearly to *orthostatic albuminuria*. Special urological studies were indicated for aberrant renal vessels, abnormal spinal pressure, etc. As the patient came from another city, I lost track of him, and have no further note on his case. Orthostatic albuminuria is often harmless, but we know through the work of Goldblatt and others that certain vascular anomalies of one kidney may cause hypertension and even uremia if allowed to go too long.

SURGEON OF THE REVOLUTION ON CROWDING GENERAL SCOTT ORDERED DRUNKARDS TO DIG GRAVES

(E. E. Hume, Col. M. C., in *Trans. & Studies Col. of Phys. of Phila.*, June)

In his pioneer work on the Treatment of Wounds and Fractures, Surgeon John Jones showed that overcrowding had been the main cause of the great mortality in London and Paris hospitals. Jail fever (typhus fever) was directly traceable to this practice, as was also dysentery. He recalled a number of European campaigns in which the sick and wounded were crowded together in one general hospital, with resulting high mortality. On the other hand, he observed that the sick and wounded left in camp, though naturally subjected to many discomforts, nevertheless generally recovered. He therefore advised medical officers to treat their patients in camp where possible, and when this could not be done to make use of churches, barns and outhouses, open to the rafters. Surgeon Jones's advice was not always followed, but the Continental Army suffered each time it was neglected.

With the memory of our recent prohibition folly all too green, one hesitates to cite an early attempt to reduce alcoholism as one of the accomplishments of Army medical officers.

Some military companies used to save up their daily rum ration until a large amount had been accumulated, and then spend a week in wassail.

Alcoholism was such a problem to military commanders in the field that in 1832 General Winfield Scott, in General Order No. 16, issued from Fort Armstrong, Illinois (now Rock Island Arsenal), called attention to the dangers of inebriety and the virtues of temperance, and then added these paragraphs:

The General therefore peremptorily commands that every soldier or Ranger who shall be found drunk or sensibly intoxicated after the publication of this order, be compelled, as soon as his strength will permit, to dig a grave at a suitable burying place large enough for his own reception, as such grave cannot fail soon to be wanted for the drunken man himself or some drunken companion.

This order is given as well to serve for the punishment of drunkenness as to spare good and temperate men the labor of digging graves for their worthless companions.

CONTACT DERMATITIS

(E. P. Coe, Little Rock, in *Jl. Ark. Med. Soc.*, Aug.)

Never apply an ointment to a surface that is acutely inflamed or weeping. With the exception of the scalp, ointments are rarely used on hairy areas, because they frequently cause pustules to form. In acute, highly-inflamed or weeping conditions the wet dressing is the sovereign remedy—normal saline, saturated solution of boric acid, or Epsom salts, one ounce to the quart. If there is secondary infection potassium persmanganate, 1:5000; or silver nitrate ⅛%. *A wet dressing should be kept wet.*

For ambulatory cases with less acute eruptions a calamine type lotion is the remedy of choice. When the drying effects of a lotion may cause fissuring, that is, about some joint, a paste may be bandaged on—zinc oxide and plain talc in petrolatum, one ounce each of the powders and two ounces of the grease. Pastes must be reapplied at least b.i.d. or they will dry and cake. When the eruption is subacute or chronic an ointment or paste containing salicylic acid, crude coal tar, sulphur, ammoniated mercury or resorcin 2% to 10% are the remedies of choice. Any of the remedies may have antipruritics added—menthol ⅛ to ½%, phenol ⅛ to 1%, benzocaine 3 to 10%. All remedies are best removed by warm water or mineral oil and cotton or during the colloid bath. *Soap is poison to these eruptions.*

Many more cases of dermatitis are cured then diagnosed. If purely soothing, innocuous remedies are used, the patient will never be made worse and his undiagnosed eruption will frequently be cured.

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DOCTOR RICHARD B. HAYWOOD ON BLEEDING AND BLOCKHEADS

AND ANOTHER NOTE ON THE 1881 MEETING OF THE STATE MEDICAL SOCIETY

IN THE YEAR 1881, Richard B. Haywood, A.M., M.D., president of the Medical Society of the State of North Carolina, delivered an Address to the Society which is brought to mind by the Editorial for the Department of Surgery for this issue. It is plain that Dr. Haywood was a finished scholar, classical and medical, and that he was richly endowed with what has well been called the saving grace of common sense.

We all may well ponder these wise words of our president of 60 years ago.

A French writer, in one of their medical journals, says that in the United States there is one doctor to every 600 inhabitants. That is, says he, they began on that basis, afterwards, there were fewer inhabitants! But with all our shortcomings there is not a young man now before me if I was sick that I would not infinitely prefer to that great idol of the Philadelphians, Dr. Rush, who is regarded as the founder of scientific medicine in this country, teaching his classes that fever is a disease of the blood, and that the more blood you extract the more fever you overcome. "Bleed," says he to his classes, "as long as you can find blood. If you can't get blood get water, and if you can't get water get wind." Within my own recollections this doctrine prevailed in North Carolina. A case of remittent fever rarely lasted more than three days, and when I tell you the treatment you will wonder, no doubt, how one lasted so long. The patient was bled repeatedly, as many as six or eight times in 48 hours. Ten grains of calomel and 10 of jalap were administered, followed every two hours by what was called in those days French powders (an inferior kind of Seidlitz); not a drop of water or other liquid was allowed and no food. A case rarely recovered and people fled from my town as the people now do from the plague-stricken cities of the Mississippi.

No professional man now before we can read an account of the medical treatment of Lord Byron at Missalonghi, and General Washington at Mt. Vernon, without feeling a blush of shame for the professional brethren who officiated on those occasions. The only food allowed Byron in nine days, after four bleedings *ad deliquim animi* was two spoonfuls of broth. General Washington fell into the hands of Rush and his disciples who did not wait for his vital powers to be exhausted before bleeling. Rush's 10 and 10—calomel and jalap—were repeatedly given, and four or five

copious blood-lettings made. Byron was young and had the vitality of a mud-turtle. He stood his men nine days. Washington was old and weak and succumbed in three days. And what do you think all this was for? why, for an ordinary sore throat, that any old woman in the country ought to have cured with spirits of turpentine and a flannel rag in one day.

Dr. Haywood was evidently many years ahead of his time in his concept of the natural history of disease.

Do not, he advised, commit the too common error that there is great and intrinsic value in medicine itself, and that the more medicine you give the more disease you overcome. And see what a philosopher he was: "Popular opinion is, that all disease will terminate in death unless timely relief is given by medicine, and if the physician says there is no necessity of taking medicine more than once or twice a day the patient will soon lose confidence and the effect of the mind on the body in this case will be deleterious. 'Despise not the opinions of blockheads,' says Christopher North, 'for in society they form a great majority and are generally the most influential.'"

A Case of Diffuse Aneurism or the Orbit was presented by Dr. J. A. Sexton, Raleigh, to the same meeting.

Preparatory to the operation a consultation was held with Drs. Lewis, Hines, McKee and Knox. A few cases had been cured by constant pressure. This plan was instituted, these gentlemen taking relays in order that the treatment should be thoroughly carried out. At the end of five hours the pressure became such torture that it had to be abandoned. Two days after this the common carotid was tied. Thirty minutes after completion of the operation the most alarming symptoms of anaemia of the brain were manifested. Deep, sighing respiration came on with constant effort to clear the throat of mucus, the countenance was pale, the expression painfully anxious, pupils widely dilated, pulse rapid. The foot of the bed was at once elevated to 30°, whiskey injected under the skin. The most gratifying effects were produced by amyl nitrite. Under its use these alarming symptoms soon passed off and the patient made a good recovery. The ligature came away on the 12th day without the slightest hemorrhage. The establishment of the collateral circulation was indexed by the difference of temperature on the two sides; 24 hours after the operation there was a difference of one degree, the thermometer being placed in the mouth outside the teeth. The difference has grown less from day to day until now, five weeks after the operation, there is only ⅛th° difference.

Whiskey under the skin is a new remedy to all old North Carolina doctors of whom inquiry has been made; and they all say the clinical thermometer was not in general use in 1881.

LAUGHTER AS A PREVENTATIVE AND A CURE

One would hardly look for a cheerful, optimistic message from Los Angeles. But a doctor in that city has written such a message[1] in a spirit as far from that of silly Pollyannaism as from stupid pessimism. He knows just as well that, "Like the crackling of thorns under a pot is the laughter of a fool," as that, "A merry heart doeth good like a medicine."

The gist of his valuable essay is passed on to you.

Few properly appreciate the fact that man's chief assets are health, honesty and spiritual confidence and ideals; or the value of calmness, steadiness, equanimity and relaxation. The pages of history from earliest recorded times down to the present are shot through with records of lives spent, often vainly, in search for happiness, peace of mind, contentment.

According to this observer and thinker, at the base or seat of all happiness is the ability to laugh —to see the ridiculous in a situation as well as the important details. He has no doubt that while we should profit by our mistakes, we should be able to laugh at ourselves; that most persons take themselves too seriously, and we should remind ourselves that it is said that over 50% of the inmates of insane asylums have delusions of grandeur. It therefore behooves us to shy away from conceit and selfishness which, in many instances, are short-cuts to the asylum. Adulation has done great damage to humanity from many angles, and especially in the fact that it has caused man and his acts to assume distorted and untruthful proportions in the matter of importance. Men are feverishly working to perfect more instruments for speed, efficiency and easy living, and have long ago lost all control of their mental offspring, so that, instead of being a free people, we are slaves to whirling machinery.

He goes on to make out his case: Viewed from a true perspective of time, the thoughtful individual may easily see how small he is, how unimportant as an individual in the scheme of the universe. It has been said that if a person has five or more worries he will never become insane. It is the one-worry person who loses his mind. Then let us so order our lives that we will have time for more than one interest or concern. Fortunate is he who has the ability to laugh sensibly and in a not obnoxious manner. Hearty laughter causes contraction of practically every muscle of the trunk. Depression of the diaphragm in laughter exerts

1. E. F. Boyd, Los Angeles, in *Southwestern Med.*, July.

pressure upon the abdominal organs, with a resultant stretching of the abdominal wall muscles and tends to keep the abdominal organs in proper anatomical position at all times bringing into play the muscles of the back, shoulders, and neck—practically all of the muscles of the body.

It is suggested that it would not be far-fetched to believe that resulting increased circulation through the neck structures would increase the products of the thyroid, parathyroid, and, in cases of young children, the thymus gland; that hearty laughter is equivalent to deep breathing, hence the lungs will be well ventilated, and, inasmuch as the heart is a contiguous organ, it comes in for its share of stimulation, especially from the diaphragm; that laughter is good abdominal massage and the liver will be stimulated and secrete more bile, the stomach and intestines will be stirred to more efficient functioning by the activity of the diaphragm, and the attendant muscular contractions of the abdominal wall. The pancreas might well come in for its mild share of vicarious activity, likewise the kidney and adrenal glands.

Hearty laughter and optimism may be a factor in lowering blood pressure by elimination of toxic products from the system. In other words, the acidity of the body is kept more nearly at normal levels, thus relieving irritation and tension of muscles and organs.

Factors that will increase human happiness are always depicted by optimistically glowing accounts of great benefits, and if pictures are used, they are those of a happy, smiling individual.

The ability to laugh and the occasion to laugh should be used with rational frequency and especially with the nervous, depressed and worried patient. It is a splendid mental tonic and laughter will certainly help to keep the corners of the mouth up. Hearty laughter should stimulate our brain by increased circulation, and thus put us in a position to better appreciate the real values of life. With a clear brain the affairs of life will appear in their true perspective. We will be able to laugh at ourselves, we will see the finer qualities and virtues in others, and it will be easy to lend a helping hand, to speak the complimentary and cheering word, to habitually minimize the weakness and misfortunes of others and magnify their good qualities.

Laughter may thus be said to be an integral part of the physiological processes of the body and mind, and, as such, should be practiced more and more. Laughter and pleasant thinking should then be considered a valuable adjunct to all-round healthy living as well as a natural easy means of total physiological exercise easily within the reach of all.

Finally, laughter begets optimism, self confidence, and relegates fear and pessimism to the background, thus giving one a great advantage in the battle of life.

PRIMARY PULMONARY CANCER—Seay
From P. 517

(c) The failure of treatment in late cases.

(d) Some of the diagnostic pitfalls to be avoided, such as too much reliance on a single negative bronchoscopy or negative röntgenogram.

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INFUSION THROUGH THE BONE MARROW

(L. M. Tocantins, Philadelphia, in *Clin. Med.*, Aug.)

By means of a syringe it has been possible to inject as much as 43 c.c. per minute intrasternally. Such rapid rates of injection are justified only when the patient is in shock. Fluids can then be given rapidly into the sternum, with the knowledge that the patient does not feel the added discomfort caused by the temporarily increased pressure in the marrow cavity.

The needle has been left in place for periods varying from 7 minutes to 30 hours. The rate of infusion by gravity is governed to a great extent by the density of the marrow. It has varied between 0.4 c.c. and 25 c.c. per minute in the manubrium or the body of the sternum of adults; in the tibia or femur of children the average rate of infusion is between 0.5 and 4.2 c.c. per min. (ave. 1.7).

The amounts infused by gravity have varied between 50 and 2000 c.c.

Citrated blood, citrated plasma, 5% dextrose solution, and plain physiologic salt solution have been infused.

Fifty-two infusions of various fluids into the bone marrow of 40 patients (33 adults and 7 infants) have been carried out. There were no local, constitutional, immediate, or delayed reactions accompanying or following any of the infusions.

Either the manubrium or the body of the sternum is the site of election for this procedure.

The use of intramedullary route is indicated whenever rapid absorption of unchanged substances is desired and the intravenous route is not available.

MACCOROS

'Take and make a thynne foyle of dowh, and Kerve it on peces and cast hem on boilyng wat and Seethe it wele. take chese & grate it and butt caste bynethen and above as losyns, and sue forth.'

NEWS

DR. McCAMPBELL RETURNS TO NORTH CAROLINA

Dr. John McCampbell announces the opening of offices at 401 West Union Street, Morganton, North Carolina. His practice will be limited to neurology and psychiatry, and patients will be seen by appointment. Dr. McCampbell was, at first, pharmacist at the State Hospital, Morganton; later assistant physician, and for a number of years first assistant to the late Dr. Patrick L. Murphy, the distinguished first Superintendent of that hospital. Upon the death of Dr. Murphy in 1907, Dr. McCampbell succeded to the superintendency, and that high position he occupied for many years—until his resignation a few years ago. Dr. McCampbell is one of the ablest psychiatrists of the South.

Dr. J. W. Tankersley, prominent Greensboro surgeon, whose favorite avocations are traveling and amateur cinematography, showed Reidsville Rotarians, meeting August 11th, color films covering excursions into South America and northern Canada. The Canadian pictures were made on a hunting trip in September, 1941, the South American scenes were filmed in March, this year.

Col. Frank W. Wilson is the new commanding officer of Moore General Hospital which is being constructed by the United States army at Swannanoa, N. C. Colonel Wilson comes to his new post from Camp Shelby (Miss.) Station Hospital where he was commanding officer.

Colonel Wilson is a graduate of the University of Maryland School of Medicine and on completing his internship joined the army in 1915. He went to France and returned in 1917 with the rank of major. Since the world war he has been on duty in Hawaii; Beaumont, Tex.; Fitzsimmons Hospital, Denver; Walter Reed Hospital, Washington; Ft. Benning, Ga.; and Camp Shelby.

Construction of the hospital is scheduled to be completed by the middle of November.

Dr. F. K. Harder, assistant commissioner of health at Cincinnati for the past seven years, is the new head of Greensboro city health department, filling the vacancy created in February by the death of Dr. C. C. Hudson.

Medical College of Virginia

The one-hundred-and-fifth session of the Medical College of Virginia, Richmond, opened on July 6th with the following enrollment: Medicine, 311; dentistry, 148; pharmacy, 100. The entering class of the school of nursing will report on September 1st.

A recent gift of $1000 for student loans from Miss Mary N. Williamson and a grant of $10,500 from the American Tobacco Company for research in physiology and pharmacology are reported with satisfaction.

Dr. Harvey B. Haag, professor of pharmacology, and Dr. Everett I. Evans, assistant professor of surgery, spent a week at the Edgewood Arsenal, Maryland, in the study of decontamination and treatment for gas and fire casualties.

Dr. R. J. Wilkinson of Huntington, West Virginia, and Captain Gillie Tyler of Lawson General Hospital, Atlanta, Georgia, were recent college visitors.

President W. T. Sanger has recently returned from a visit to leading medical centers in Canada, the north and the middle west.

MARRIED

Dr. Robert Murray Miskimon, of Buffalo, New York, and Miss Betty Wallace Blanton, of Richmond, were married on August 15th.

Dr. Irving Lee Hutcherson, of Gladys, Virginia, and Miss Margaret Hodges Peak, of Long Island, Virginia, were married on July 18th.

Dr. James Thomas Allen, of Nashville, Tennessee, and Miss Olivia Ann Rooke, of Roanoke Rapids, were married on July 18th.

Dr. John Edgar Stevens, Jr., and Miss Charlotte Ruth Mooers, both of Richmond, were married on July 31st.

Dr. William Russell Jones, Jr., and Miss Frances Carlyle Creath, both of Richmond, were married on August 3rd. Dr. Jones is a Lieutenant in the Medical Corps, United States Army, and is stationed on the West Coast.

BOOKS

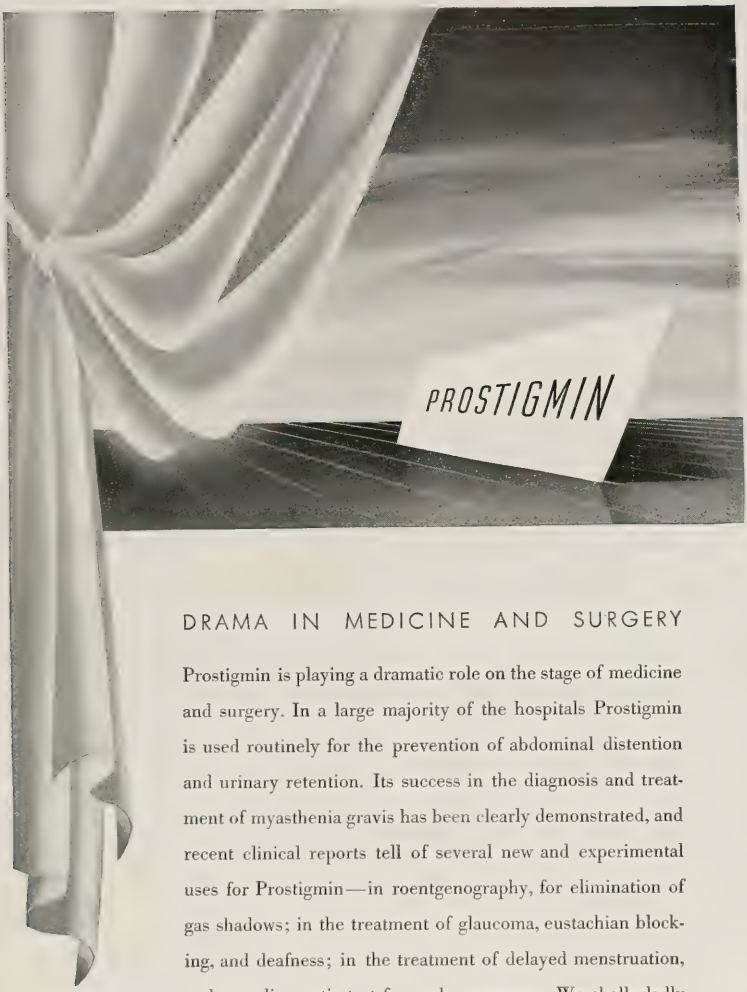
BLOOD GROUPING TECHNIC: A Manual for Clinicians, Anthropologists, and Students of Legal and Military Medicine, by Fritz Schiff, M.D., Late Chief of the Department of Bacteriology, Beth Israel Hospital, New York City; and William C. Boyd, Ph. D., Associate Professor of Biochemistry, Boston University School of Medicine; Associate Member Evans Memorial, Massachusetts Memorial Hospitals, Boston; with a foreword by Karl Landsteiner, Rockefeller Institute for Medical Research. *Interscience Publishers, Inc.*, 215 Fourth Avenue, New York City. 1942. $5.00.

The experiences of the World War now in progress have established as never before the usefulness of injections of blood and blood products. There was never a time in which there was so much interest in all that pertains to the use of blood as a life-saving measure in civilian as well as in military practice.

This book gives the theoretical foundations and the technic in general and special applications. Advantages, organization and conduct of blood banks are detailed. An account is given of blood group studies in anthropology, of the utilization of corpses as a source of blood for transfusion, and of the medicolegal application of blood grouping and blood stains.

We can not know too much about how to get most of good and least of harm for our patients from the administration of this sovereign remedy, blood. The book under review is an excellent source of this knowledge.

ADVANCES IN INTERNAL MEDICINE (Vol. I), editor, J. Murray Steele, M.D., New York University Division, Welfare Hospital; associate editors: William Dock, M.D., Cornell; Tinsley R. Harrison, M.D., Bowman Gray School of Medicine; Chester S. Keefer, M.D., Massachusetts Memorial Hospitals; Robert F. Loeb, M.D., Columbia; Warfield T. Longcope, M.D., Johns Hopkins;



DRAMA IN MEDICINE AND SURGERY

Prostigmin is playing a dramatic role on the stage of medicine and surgery. In a large majority of the hospitals Prostigmin is used routinely for the prevention of abdominal distention and urinary retention. Its success in the diagnosis and treatment of myasthenia gravis has been clearly demonstrated, and recent clinical reports tell of several new and experimental uses for Prostigmin—in roentgenography, for elimination of gas shadows; in the treatment of glaucoma, eustachian blocking, and deafness; in the treatment of delayed menstruation, and as a diagnostic test for early pregnancy. We shall gladly send literature on the use of Prostigmin in these indications.

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George R. Minot, M.D., Boston City Hospital, and I. Snapper, M.D., Peiping Union Medical College. *Interscience Publishers, Inc.*, 215 Fourth Avenue, New York City. 1942. $4.50.

The idea accounting for this publication is that a need exists for a summary being made from time to time of progress in the field of internal medicine.

Among subjects treated of in the initial volume are:

The Use of the Miller-Abbott Tube.

The Treatment of Diabetes.

Sympathetic Nervous Control of the Peripheral Vascular System .

The Action of the Sulfonamide Drugs.

The Choice of the Sulfonamides.

Present Trends in the Study of Epidemic Influenza.

Hypertension.

Nephrosis.

Riboflavin Deficiency.

The names of those in charge guarantee success of the venture.

CLINICS, edited by George Morris Piersol, M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania, Philadelphia. *J. B. Lippincott Company*, E. Washington Square, Philadelphia. Bi-monthly. $12.00 per year.

The Editors and Publisher have arranged to put out this new publication in response to a need. A symposium is planned for each number. A large section is to be reserved for original articles. It is planned to publish many articles on phases of military medicine of special interest to the general practitioner.

Volume 1, Number 1 initiates the program in a thoroughly practical way, with a consideration of matters of everyday concern—burns, shock, adenopathy, auricular flutter, vitamin-B deficiency, cardiac efficiency.

A cordial welcome is extended this new entrant to the field of medical journalism, and a confident prediction made that the success awaits it that is well-deserved.

A TEXTBOOK OF GYNECOLOGY: By Arthur Hale Curtis, M.D., Professor and Chairman of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of the Gynecological Service, Passavant Memorial Hospital, Chicago. Fourth Edition, Reset. 723 pages with 401 illustrations. *W. B. Saunders Company*, Philadelphia and London, 1942. Price $8.00.

An author who writes a textbook and uses less than a thousand pages prepossesses most of us in his favor. This popular work's fourth edition maintains the high mark set by the first three, and brings its dealing with the subject up to the present of proved advances in this field.

The thoroughly practical nature of the book, and of the working of the author's mind, is indicated by the fact that the clinical part of the book is begun with a chapter entitled, "The Gynecological Patient Presents Herself."

Gonorrhea in woman, disorders of menstruation, displacements of the uterus and carcinoma of the cervix uteri are just a few of the important subjects which are dealt with in a judicious manner.

The book provides good instruction and good reading.

THE HAND—Its Disabilities and Diseases: By Condict W. Cutler, Jr., M.D., F.A.C.S., Associate Surgeon, Roosevelt Hospital; Director of Surgery, Welfare Hospital; Consulting Surgeon, New York Dispensary; Chief, Emergency Medical Service, New York County; Fellow of the American Surgical Association. 572 pages with 274 illustrations. *W. B. Saunders Company*, Philadelphia and London, 1942. Price $7.50.

One does not have to agree with the author that the hand is either the most vulnerable or the most useful member of the human body, in order to agree that it is highly desirable that the functional capacity of the hand be conserved in every way and to the fullest possible degree.

Here are set forth the methods of dealing with hand injuries and infections, major and minor; and with deformities, congenital and acquired. Of the latter class of conditions it is said they are first encountered by the general practitioner, who must recognize them and "advise *or treat* the patient correctly."

With this book as a guide the general practitioner should find no difficulty in treating his patients' hands in a first-class manner; and from it surgeons may learn much for the good of their patients.

SYNOPSIS OF PATHOLOGY, by W. A. D. Anderson, M.A., M.D., Assistant Professor of Pathology, St. Louis University School of Medicine; Pathologist, St. Mary's Group of Hospitals. With 294 text illustrations and 17 color plates. *The C. V. Mosby Company*, 3525 Pine Boulevard, St. Louis. 1942. $6.00.

The author has written this book to fill the gap between the elementary manuals of pathology and the large textbooks and reference works. In differentiating of the various kinds of inflammation; and in the description of repair and healing, of circulatory disturbances, and of the many infections, the book is clear and concise.

The pathology of chemical poisoning, of vitamin deficiencies, and of disturbances of growth is amply covered. The section on the pathology of the various systems of the body supplies all that is needed by the bedside and office doctor. Tumors are described as they occur in the various organs—carcinoma of the breast, stomach, prostate, etc.; sarcoma of bone, skin; glioma of brain.

This is an excellent book for any doctor in prac-

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tice as a whole or in any of its branches. It is filled with information of everyday usefulness, expressed with all the descriptive power of Gray's *Anatomy*.

AMERICAN SURGEON ABROAD, by RICHARD A. LEONARDO, M.D., Ch.M., F.I.C.S. *Froben Press*, New York City. 1942. $2.50.

The author advises the United States doctor now in his youth to be planning now for post-war study in Europe, and he gives many good reasons for the advice. His own experiences in many cities of many countries are remembered appreciatively, and he believes that conditions in Europe after the present war is over will be even more favorable for postgraduate study in medicine and surgery than he found them the half-dozen times he pursued such studies there.

Dr. Leonardo is both scholar and surgeon, and the book is history as well as guide, all delightfully presented.

FACTS FOR (1942) CHILDLESS COUPLES, by E. C HAMBLEN, B.S., M.D., F.A.C.S., Associate Professor of Obstetrics and Gynecology, Duke University School of Medicine; Chief of the Endocrine Division of the Department of Obstetrics and Gynecology, and Endocrinologist, Duke Hospital, Durham, North Carolina. *Charles C. Thomas*, 220 East Monroe Street, Springfield, Illinois. $2.00 postpaid.

Few couples are absolutely sterile. Misinformation gathered by or forced on a sterile couple is often the greatest factor in the delaying of the investigation of sterility. The need for a thorough study is shown and the therapeutic approach to sterility. For the medical student many of his misunderstandings of physiologic endocrinology are clarified. The laymen may here learn the physiology of the reproductive responsibility of man and woman.

MEDICAL PROGRESS ANNUAL, Volume III—1942, Edited by ROBERT N. NYE, M.D., Managing Editor of *The New England Journal of Medicine*. *Charles C. Thomas*, Springfield, Illinos. $5.00 postpaid.

Francis M. Rackemann writes on Drug Allergy; the late Soma Weiss on Arteritis; John F. Fulton on Aviation Medicine; Walter T. Salter on Blood Chemistry; Allan M. Butler on Dental Caries; Joseph C. Aub on the Adrenal Cortex; Sherman S. Pinto on Industrial Hygiene; Donald Munro on Neurosurgery; Harold Jeghers on Nutrition; Thomas R. Goethals on Obstetrics; Robert F. Loeb on Plasma Proteins; Richard Schatzki on Diagnostic Roentgenology; Maxwell Finland on Specific Serums; Edward D. Churchill on Thoracic Surgery; Arnold P. Meiklejohn on Vitamins; Charles A. Janeway on War Medicine. These are short and plain reviews and evaluations of the Im-

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Carnacton supplies certain factors to the organism. These (1) reduce blood pressure through a depressor action, (2) exert a prompt and forceful vasodilating effect, (3) raise the threshold of excitability in the centers of the vegetative nervous system.

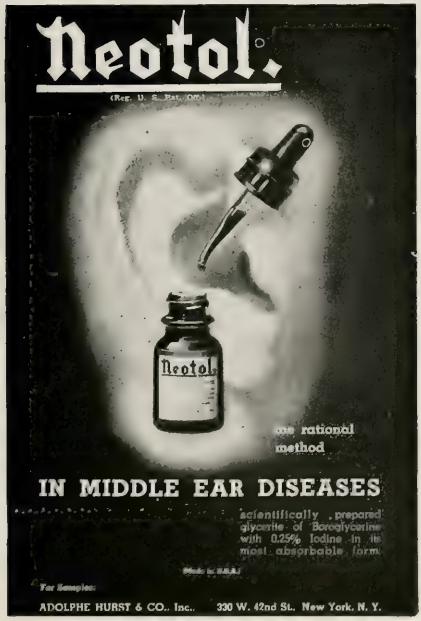
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Carnacton is especially valuable for moderating the symptoms of *Intermittent Claudication*, improving locomotion and alleviating rest pain. Carnacton also serves effectively in the control of *Raynaud's Disease, Angina Pectoris, Arteriosclerosis, Cardiac Dyspnea.* Write Dept. 7 for literature.

1 cc. and 2 cc. ampuls—boxes of 12 and 50.

Vials of 30 cc. and 50 cc. for oral use.

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OF INTEREST TO DOCTORS

DAVIS and GECK, 57 Willoughby Street, Brooklyn, N. Y., has released its catalogue on FILMS on Surgery, 1941-1942 edition. Films in black and white are loaned from the library without charge for group showings to medical schools, hospitals and accredited and surgical societies. Films are available in 16 mm. width only. All bookings are recorded upon receipt and promptly confirmed by mail. Requests for bookings or for information regarding these films as well as color films should be addressed to Surgical Library, c/o Davis and Geck.

THE NEW YORK HOSPITAL now located at 525 East 68th street has as its background one of the oldest institutions for medical aid in the East. For back in 1854 a society was organized by Mrs. Cornelius DuBois. This society opened its first building in May 1855 in St. Mark's Place, for the purpose of providing a nursery for the infants of laboring women and others deprived of their mothers. A foundling hospital or "infant home" was erected in 1861 and for four years, was used for sick and disabled soldiers of the Civil War. In 1866 the building was razed and other buildings erected, which contained 14 wards, a school, dining and playrooms. Each woman admitted was requested to nurse and care for one child besides her own. Children were kept until 8 or 10 years of age and then adoption was arranged. This institution later became incorporated with the New York Hospital.

A bronze statue of the late Drs. William J. and Charles H. Mayo in their surgical gowns will be the central point of interest of the Mayo Memorial Shrine to be erected in Rochester by residents of the city and Olmstead County. It will be placed on a granite base before a granite background in the central open space of an amphitheater, symbolic of operating rooms. The shrine, designed by James Earle Fraser, New York sculptor, will be separate from that being planned by the Minnesota Memorial Commission. This commission was appointed by Governor Stassen late in 1940 to study the establishment of a $250,000 fund for a memorial to the Mayos. State Senator William B. Richardson, Rochester, is chairman of the commission, which is composed of seventeen representative citizens of Minnesota.

EIGHT $300 WAR BONDS will be awarded as prizes to the winners of a nationwide War Poster Competition. Artists and Photographers anywhere in the United States are eligible. Competition closes October 15th. Details may be obtained from National War Poster Competion, c/o Artists for Victory, 161 Park avenue, New York, N. Y.

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portant ACCEPTED Recent Advances in Diagnosis and Treatment on Fifty-two General Medical Subjects. Because it deals well with fifty-two topics of general medical interest and because each subject is written by a special authority, this year book is of special value to specialists and general practitioners.

SHOCK. ITS DYNAMICS, OCCURRENCE AND MANAGEMENT, by VIRGIL H. MOON, A.B., M.Sc., M.D., Professor of Pathology, Jefferson Medical College, Philadelphia, Pa. Octavo, 324 pages, illustrated with 36 engravings. *Lea & Febiger,* Washington Square, Philadelphia. Cloth, $4.50 net.

A condensed practical treatise on shock, a subject always of great interest, and now of greatly increased interest in times of war. Since this type of circulatory failure occurs in a wide variety of conditions other than physical trauma, internists and other specialists must have intimate knowledge of its mechanism, its conditions of occurrence, its early recognition, its prevention and its treatment. All of these supply new information on diagnosis and treatment here made available. The first part of the work deals with the physiologic and pathologic features of shock, its various complications and its sequelae. The second part deals with prevention, early recognition, diagnosis and management. A special section sets forth the most recent developments in the preparation of blood substitutes and of their use in treatment. Short summaries conclude each chapter.

This is a work of exceptional value to all who deal with any condition in which shock may develop. Surgeons, industrial physicians and doctors engaged in military practice will find it invaluable.

CHEMISTRY AND PHYSIOLOGY OF THE VITAMINES. by H. R. ROSENBERG, Sc.D., Jackson Laboratory, E. I. du Pont de Nemours & Co., Wilmington, Del. 1942. *Interscience Publishers, Inc.,* New York. $12.00.

Ten years ago the author was present at a meeting of the Swiss Medical Society when Karrer announced the isolation of essentially pure vitamin A. This decided the author on compiling the data on vitamins. The present is made up of these data, with the addition of the great many added by himself and others since that titme.

The book meets a great need in supplying entirely dependable and complete information on this group of substances so important in preventive and curative medicine.

ADVANCES IN PEDIATRICS: Editor ADOLPH G. DE SONCTIS, M.D., New York Post Graduate: Associate Editors: L. EMMETT HOLT, Johns Hopkins; A. GRAEME MITCHELL (deceased; ROBERT A. STRONG, Tulane; FREDERICK F. TISDALL, Toronto. Volume 1. *Intercience Publishers, Inc.,* New York. 1942. $4.50.

This is the first of a series of annual reviews of pediatric advances. Subjects are: Toxoplasmolysis —A Recently-Recognized Disease of Human Beings; Review of Virus Diseases; Chemotherapy in Infancy and Childhood; Electroencephalography; Vitamin K in Hemorrhage; Persistent Ductus Arteriosus; The Premature Infant; Tuberculosis; Endocrinology; and Short Abstracts of Some Other Advances. Each subject is the work of a pediatrician of established reputation, which warrants that all these important subjects are presented in a way to be of the greatest usefulness to those who have the health care of infants and children.

ACCIDENTLAL INJURIES, The Medico-Legal Aspects of Workmen's Compensation and Public Liability, by HENRY H. KESSLER, M.D., Ph.D., F.A.C.S., Medical Director, New Jersey Rahabilitation Clinic; Formerly Medical Adviser, New Jersey Workmen's Compensation Bureau; Attending Orthopaedic Surgeon, Newark City Hospital, Newark Beth Israel Hospital, etc. Second edition, enlarged and thoroughly revised, published, 1941. Octavo, 803 pages, illustrated with 202 engravings. *Lea & Febiger,* Washington Square, Philadelphia.

The first edition, so widely popular with doctors, lawyers, insurance companies, executives and industrial accident boards, has been enlarged and revised with special emphasis on traumatic neuroses and rehabilitatiton. The physician's responsibility in cases having medicolegal aspects is discussed, based on an experience of 100,000 cases in the New Jersey Rehabilitation Clinic and the New Jersey Workmen's Compensation Bureau. More than a million individual reports have been examined in their teaching made use of.

The knowledge contained is discriminatingly chosen to best serve the doctor who treats cases which are apt to get him into court. It establishes principles for estimating traumatic disability, covers the physiology of extremities and spine, the functional capacities of each member and then the remaining parts of the body.

Contents: Historical Review—Medical Aspects of Workmen's Compensation Laws—Schedules for Rating Disabilities—Pathology of Trauma—The End-results of Trauma—General Principles Underlying Disability—The Upper Extremity—The Lower Extremity—Injuries to the Head—The Spine—The Thorax—The Abdomen and Abdominal Cavity—Hernia—The Genito-urinary Apparatus—The Eye. By Andrew Rados, M.D.—The Ear, Face, Nose and Throat—Injury and Disease —Accident Neurosis—Occupational Disease—Rehabilitatiton of the Physically Handicapped.

SALAT

Take Psel, Sawge, garlee, chibol'i, oynons, leek, borage, myn't, punett, fenel, and ton tressis (cresses), rew, rosemarye, purslanye, laue, and waische hem clene, pike hem, pluk he small wip phy (thine) hand and myng hem wel with rawe oile, lay on vynegr and salt and suit it forth.

NEWS

Dr. M. B. Clayton, a member of the staff of Davis Hospital, Statesville, N. C., has been appointed chief surgeon of the Southern Railway System, succeeding Dr. Glenn I. Jones, who died suddenly recently.

Dr. R. T. Wilder, of Aberdeen, N. C., has located at Glen Alpine, N. C., where he will have charge of the practice of Dr. C. L. Walton during the latter's service in the United States Army.

MARRIED

Dr. John Walker, of Lynchburg, and Mrs. Millian Brooke Somervile, of Richmond, were married on August 19th.

Dr. August John Podboy, of York, Pennsylvania, and Miss Harriett Watts, of Lynchburg, were married on August 29th.

Dr. Louis Percival Britt, Jr., of Annapolis, Maryland, and Miss Margie Hartman Lipe, of Albemarle, North Carolina, were married on June 13th.

DIED

Dr. Alexander Terrell, 81, a prominent member of the Lynchburg, Va., medical profession for 56 years, and physician to Randolph-Macon Woman's College since its fonnding in 1892, died August 30th. Dr. Terrell was the first to use Röntgen rays in Lynchburg and he was one of that prominent group of South Carolina, North Carolina and Virginia doctors who, in 1897, founded the Tri-State Medical Association.

Dr. F. Stanly Whitaker, 59, member of a family long prominent in medicine in North Carolina, died July 24th at his home in Kinston.

Dr. J. L. Dietrick, Ocean View, Va., died August 30th, after a short illness.

GASTRIC ULCER

(Waltman Walters, Rochester, Minn. in *Jl. Mo. Med. Asso.*, Aug.)

Röntgenologists estimate that in from 10 to 20% of cases it is impossible for them to distinguish between a benign ulcer and a cancerous ulcerating lesion of the stomach, and 10% of patients operated on for carcinoma of the stomach have had a röntgenographic diagnosis of gastric ulcer.

The clinical symptoms of ulcerating cancer of the stomach are similar to those of benign gastric ulcer in a third of the cases and an effective response to a medical regimen has been obtained after the institution of nonsurgical treatment in malignant gastric ulcerating lesions before it was recognized that the lesions were malignant. Gastroscopic examination, supplementing fluoroscopic and röntgenographic examinations of the stomach, has been of assistance in differentiating between some benign and malignant gastric ulcers as well as in determining the effect of nonsurgical treatment on the progress of such lesions.

A serious responsibility exists in calling any ulcerating lesion of the stomach benign when it persists or recurs under nonsurgical treatment. This is especially true of patients who have low gastric acids and of those beyond middle age.

Few large chronic gastric ulcers will heal under medical regimen. If *chronic* gastric ulcers were considered to be surgical lesions and fewer patients of this type subjected to prolonged periods of medical treatment but partial gastrectomy were performed, the risk of overlooking an early carcinoma of the stomach would be prevented in a considerable group of cases. In addition, an early return to full working capacity on a normal diet can be expected to follow properly chosen and executed surgical operations for the removal of the ulcer. In the hands of well trained surgeons the risk of such surgical procedures does not exceed 3%.

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Should the problem of infant feeding be kept where it belongs—in the hands of the medical profession?

Mead Johnson & Company are, as always, on the side of private medical practice, and this is one reason why we refused to advertise "complete foods" which "simplify" infant feedings. The use of cow's milk, water and carbohydrate mixtures represents the one system of infant feeding that, for three decades, has received universal pediatric recognition because it is readily adjustable for meeting the changing requirements of the baby. Dextri-Maltose is a carbohydrate employed in this system of infant feeding of rich and enduring background in clinical experience.

Under the traditional Mead Policy, we re-affirm the fundamental principle that "Babies supervised by physicians are better babies." We continue to be voluntarily committed to the same side of this important medical economic question—as you.

Apple Tart

Take gode applys and gode spycis and figys and reysons and perys (pears), and wan they are well ybrayed coloured with safron wel, and do yt in a cofyn, and do yt forth to take wel.

CA-MA-SIL

For PEPTIC ULCER and Chronic Gastric Hyperacidity

Avoid Between Meal Feedings.

Three nearly normal meals.

Quick relief—Palatable. No alkalosis.

PROLONGED ACID NEUTRALIZATION is important in the treatment of peptic ulcer, gastric hyperacidity, gas cramps, heart-burn, acid indigestion. **CA-MA-SIL** will neutralize over a period of 3 hours. This obviates the necessity of between meal feedings and insures the comfort of the patient, especially during the night.

CA-MA-SIL is a preparation having as its chief ingredient a new and specially developed magnesium silicate, with a molecular ratio of magnesia to silica of 1:3.3 (is not trisilicate). This material was found to be therapeutically superior to any employed in the treatment of peptic ulcer.

Avoid the excessive use of milk.

Put your next patient on CA-MA-SIL and see the excellent results.

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JAMES M. NORTHINGTON, M.D., Editor

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Surgery in the Office: Anesthesia as a Specialty

Charles Stanley White, M.D., Washington
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THE SUBJECT of office surgery is one which had not been properly developed to meet the indications before the present war came on. With the coming of the war and the greater demand on the doctors' time, on hospital facilities and on transportation, it is imperatively necessary that indicated surgery be done in the way best conserving all these essentials, so far as possible without detriment to the good of the patient.

The subject is not a new one to me. We have thought about it, talked about it, written about it. This request article is but repetition and amplification of what has been said before.[1] [2]

It must be assumed that the physician has the requisite judgment, skill and equipment and that the best interests of the patient are given first place.

Before advising an operation in the office, certain details should be considered among which are these: Is the patient dependable and coöperative? Will he prepare himself as directed and can he be depended upon to keep the appointment? When a patient is *persuaded* to use the office instead of a hospital or if he objects to a local anesthetic or is highly emotional, the operation in the office is likely to fall short of expectations of patient and physician. Children as a rule are not good subjects, chiefly because they are unable to grasp the full meaning of the various details of instruction and consequently do not carry out the part assigned to them. Patients in poor general physical condition; those with myocardial disease, coronary occlusion or hypertension; the anemic and the even slightly jaundiced—since they have an embarrassing habit of passing away before, during, or just after a minor operation—should have only such surgery as is urgently demanded, and none of this in the office. It is a wise precaution to have a third party—the office nurse or a relative of the patient—if not in the operating room, at least within the sound of your voice. Routine matters of a trivial nature may assume formidable proportions during the course of a minor operation. The occurrence of syncope, the failure of the electric current, the possibility of breakage, the annoying telephone, the unexpected visitor, the unwelcome thunder shower, are only a few of the interruptions that can and may distract attention from the patient and operation.

Many minor operations have been unsatisfactory or sources of serious embarrassment because of the failure to recognize complicating conditions which were not anticipated. Of the skill of the physician, there is nothing to be said beyond the statement that every doctor should try to know his limitations and remain within them.

The preparation of the surgical field is often neglected or done in a perfunctory manner. The mere sponging with alcohol is routine in many offices—a method so inadequate that in time there must result infections which could have been pre-

1. White, C. S.: *Medical Annals District of Columbia*, Jan., 1942.
2. *Ibid*: *Anesthesiology*, July, 1942.

vented by simple measures which can be readily carried out in the office. The use of benzene, acetone or ether, followed by alcohol and any acceptable germicide is recommended. Tincture of iodine, because of its variable reactions upon various skins, is not recommended.

Should protect the operative area, and care should be exercised that sutures, when used, do not drag over unsterilized surfaces.

Antitetanus serum should be used in many more cases than it is—in every case of wound contaminated by street, road or farm filth—but *never without the precaution of the sensitization skin test.* Regardless of whether the patient has had an injection of serum previously, this precaution should never be overlooked.

Rarely is any preöperative medication indicated for surgery in the office. When a sedative is used, it should be used sparingly.

The choice of an anesthetic is of importance, as is the employment of a competent anesthetist in the case of general anesthesia. Provision must be made that the patient have an empty stomach, that an emesis basin be at hand, and that towels and forceps for tongue traction be available. Failure to supply any one of these essentials may be the occasion of serious consequences.

The patient under a general anesthetic should not be left alone even for the briefest period, and after he has reacted he should be assisted from the table by a person in mental and physical readiness to meet any development. Patients have injured themselves, upset much equipment and brought grave censure on the operator, in an attempt to get up and dress without help.

It may not be amiss to remind that sterilizers must be shut off and that no kind of flame or spark must be permitted in any operating room in which ether, ethylene or cyclopropane is used. Occasionally a fulgurating needle or cautery is used in the presence of these anesthetic agents, and only the mercy of Providence prevents an explosion.

Intravenous anesthesia, the best in many cases, should be administered only by a qualified anesthetist. Local anesthesia is desirable in the majority of cases, and many excellent ones are available. Weak solutions in larger quantity are preferable to concentrated solutions. In my own opinion cocaine has no place in office practice. The idiosyncrasy encountered occasionally has been the source of hair-raising dramas and even tragedies. The many excellent and relatively safe substitutes make the use of cocaine as inexcusable as it is unnecessary.

No local anesthetic should be injected in close proximity to an infected area, or used without caution where a tourniquet is employed. In opening a felon, the use of a tourniquet at the base of the finger in conjunction with local anesthesia may lead to gangrene of the entire finger, the combined pressure of the tourniquet and solution sufficing to produce thrombosis.

For injecting the anesthetic solution a 5- or 10-c.c. syringe and a sharp, fine needle that locks on the barrel should be used, both tested before they are used, and an additional needle sterilized in case of the first becoming bent, broken or contaminated.

Anesthetic solutions should be freshly prepared or from ampoules—not made up from tablets dropped into sterile water and boiled. There is no assurance of sterility or potency from the last-named method.

Very few offices can furnish autoclave sterilization of instruments, but boiling for 10 minutes before and after each operation (and I stress *after*) is efficacious. Dressings must be sterilized under steam pressure. Arrangements can be made for this with a hospital.

A nitrous oxide unit in common use by dentists could well be used by us. The patient holds the mask in place with one hand and pumps the gas in with the other. As soon as a state of analgesia is obtained, the patient involuntarily relaxes, drops the mask, and discontinues compressing the bulb. The impossibility of producing deep anesthesia makes it very safe.

For an incision into superficial infections, ethyl chloride will give enough anesthesia to allow painless evacuation of the pus. For incision and drainage of deeper infections, local anesthesia is likely to be painful; intravenous or inhalation anesthesia should be used instead.

Foreign bodies occasionally bring up problems which remain unsolved. It is a good rule not to undertake to remove a foreign body in the office that cannot be certainly located by palpation. Local or general anesthesia in an institution, probably with the aid of a fluoroscope, is the least requirement for removing foreign bodies which cannot be plainly located—and then failure may result. It is well to remember that local anesthesia with infiltration will seemingly displace a foreign body or at least make palpation of it impossible, increasing the difficulty of its extraction.

In many instances the temptation to remove neoplasms in the office outweighs the soundest judgment. The excision of tumors from the female breast should never be an office procedure unless their benign character is established. To remove a breast tumor and learn a week or two later that it is malignant creates an unfortunate situation. The growth has been disseminated, replacing a

good prognosis with a bad one, and the operator is lucky if he is not blamed for bringing about a hopeless situation.

Pigmented moles should not be excised unless previously treated thoroughly by irradiation. Every tumor of doubtful nature should be submitted to the pathologist. This rule brings startling developments for the operator and patient. It is far better that these doubts be resolved before than after the attempt at surgical cure. Lipomata and sabaceous cysts offer little difficulty of *macroscopic* diagnosis.

The edges of incised and lacerated wounds can be better cleaned and approximated after these edges are anesthetized, and in general this should be done.

Procedures which can be adequately treated in the office include simple fractures of the extremities in which the deformity does not require extensive manipulation or complicated splinting, injection of varicose veins and ganglia, and a great percentage of cases of hemorrhoids. Diagnostic aspiration of cavities containing fluid demands a needle of sufficient lumen to remove thick exudates. A fine needle may seem safer and less painful, but tenacious or dense fluids will not flow through it and so there is failure to divulge the nature of the contents of the sac or cavity.

After any operation done in the office, it is a wise precaution to delay the departure of the patient until he is quite himself. He should be told that some pain may follow for a few hours. Providing a sedative or a prescription for one may obviate a night call. The patient should be informed that the dressing may show a blood stain before the next office visit, but that if the bleeding seems excessive he should communicate with you or a designated substitute. The possibility of swelling which so frequently follows an operation, thereby increasing the tension on the dressing, should not be forgotten and the patient further advised to adjust or cut the dressing or phone in for instructions in such an event. To neglect to take into account what may seem to the physician insignificant may eventuate into a major complication from the patient's standpoint.

Discussion of the fee in advance is seldom out of order, in the interest of both the physician and the patient. Should the patient desire to know the expense he will be put to, a given amount should be named, with the proviso, if necessary, that complications may increase the cost. Under no circumstances is it justifiable to evade such a question. The patient has a right to know, and his showing an interest in the amount is usually a good indication that he will pay a reasonable fee. Many doctors feel that it is unethical to discuss the matter of what it will cost. In my opinion this is absurd. Plain, straightforward financial dealings in a doctor's office are just as much in order as in a bank and help to maintain those cherished relations which usually exist between doctor and patient.

Anesthesia for office operations is deserving of special consideration.

Refinements in the administration of all forms of anesthetics have materially increased their safety and usefulness, with less risk and more comfort to the patient and at the same time to provide the relaxation conducive to good surgery. Since we may choose between various agents to be introduced intravenously, spinally, by inhalation, rectally, by nerve block or locally, selection of anesthesia suitable for every type of surgery has become possible.

For some three-quarters of a century after their first use it was the custom to assign the job of giving the anesthetic to the most inexperienced person present with any pretension to medical knowledge. Now it is very different. The well-trained anesthetists on the staff of every considerable hospital are specialists and consultants in fact as well as in name. Remarkable as the progress has been in anesthesia, we feel that a great opportunity has been missed by many of those who specialize in this branch of medicine. The status of the anesthetist, at present, in some locations, approaches that of a highly trained technician. The anesthetist should be consulted and have the chief responsibility in the selection of an anesthetic for an operation of any gravity. Hitherto the surgeon has selected the anesthetic, with now and then some consideration paid the preference of referring physician or patient. The selection of the anesthetic is the responsibility of the anesthetist, this selection to be made after he has examined the patient and obtained a comprehensive history of the case and a description of the operation contemplated. The patient who does not have the benefit of the special knowledge of the anesthetist in choice as well as administration of the anesthetic does not have all we have to offer.

Few surgeons have had a long training in anesthesia; very few have had experience with the administration of many of the newer agents. We view the anesthetic, no doubt, from the point of safety, but it is entirely possible for us to be too insistent on complete relaxation and, occasionally, on keeping down the item of expense. While in a majority of instances all goes well, now and then the patient suffers the consequences of failure to entrust the choice and administration of the anesthetic to one with special, recent training. In this manner a certain feeling of confidence is established which helps to prepare the patient for

what might be, in many cases, a dreaded ordeal.

Choice of an anesthetic often becomes routine, but a certain flexibility is imperative if the best results are to be obtained. How much better it would be if the surgeon would ask the anesthetist to see the patient, with a knowledge of the diagnosis and the type of operation decided on, make his examination, get acquainted with the patient, and choose the anesthetic. If the patient is seen only immediately prior to the administration of the anesthetic it is not only very impersonal but, to the patient, perfunctory and indicative of indifference on the part of the anesthetist.

As a post-operative routine, the anesthetist should visit the patient on the day of and the day after operation, then at any subsequent time that he believes it would be to the advantage of the patient. Should complications develop, particularly involving the respiratory system, the anesthetist should have a strong voice as a consultant. The administration of oxygen and carbon dioxide, often a post-operative therapeutic measure, is best done by or under the direction of the anesthetist. As to other complications during the convalescence, such as vomiting, distention, retention of urine, thrombosis and shock, the anesthetist should be of service, and he should avail himself of the opportunities offered to improve his technic, both from the prophylactic and the curaitve angle. There is no substitute for first-hand information.

The anesthetist's responsibility does not end when the operation is concluded, but should extend through the period of conavlescence.

An anesthetist is a person who is devoting practically all his time to the specialty of anesthesia. Many good anesthetists have to devote a considerable part of their time to practice in other fields of medicine, so their time for visiting patients before and after operations is limited. One would like to think of the anesthetist as one who devotes all of his time to anesthesia and its ramifications.

There appears no good reason why anesthetists should not establish themselves as other medical groups and be prepared to furnish their services any time during the twenty-four hours for any type of anesthesia. Gas therapy appropriately goes along with anesthesia. Anesthetists should be prepared to assist in the management of postoperative complications. Such an organization could give superior service and, at the same time, spread the work much to the advantage of the anesthetist. Bronchoscopic treatments should be considered a part of their work.

At the present time, there is duplication of much expensive apparatus. In the present arrangement, anesthetists are kept unnecessarily close to the telephone, whereas, in the group system, much more leisure would be afforded and much overhead would be deleted. It is hoped that such a plan will be made operable in the not distant future.

The anesthetist's fee is a subject which should be discussed frankly. There are many complaints about the fee. As a rule, I believe the fee is well earned, but many patients pay it with a feeling of having been fleeced; particularly those who do not see the anesthetist at any time before, during or after the anesthesia, and his only connection with the patient is a statement which is submitted or attached to the hospital bill.

In some instances the surgeon is to blame in not informing the patient in advance that there will be an anesthetist's fee and its approximate amount. It might be assumed that a patient's mind is so occupied with the operation that some financial details are overlooked, but the patient should be acquainted with *all* the additional charges outside of the hospital room, including the surgeon's fee. If the anesthetist were to make it a part of his duties to see the patient before and after the operation, much of the controversy over the fee would be avoided. In this way, the patient would know that this is a specialized service from a highly trained consultant, for which he should expect to pay. Anesthetists, by such a contact with their patients, justify the payment of proper charges, establish themselves as specialists and increase their prestige so as to create a legitimate demand for their services. This side of the practice of anesthesiology is sadly neglected and we trust farsighted anesthetists will appreciate these important facts and adapt their practice to some such general plan.

ADVISE THOSE WITH EAR DISEASE TO USE COTTON PLUGS OUTDOORS

(L. M. Turnbull & L. B. Franklin, Los Angeles, in *J. A. M. A.*, Sept. 12th)

Persons with otitis media should keep cotton plugs in their ears while outdoors or around animals. Most flies deposit their eggs or larvae where there is the odor of decaying animal matter. Fly larvae are commonly found in the ear, especially in warm climates, in cases of purulent otitis.

Of *Cochliomyia americana*, a fly which is common on the American continent, the larvae are known as screw worms. This fly breeds only on living animals and is capable of penetrating unbroken skin. The eggs are deposited in batches on injured or unbroken skin. The larvae hatch in from six to eight hours, and in the cavities of the nose or ear may burrow into tissues, even devouring bone.

The larvae are frequently deposited in wounds on living animals and in man. The resultant lesions can produce frightful injury, and a mortality of 8 per cent has been reported. Although the fly is capable of penetrating unbroken skin, the odor of suppuration attracts it.

The larvae are readily killed by chloroform, and this should be used early in the form of vapor if possible or in fluid form if necessary.

Some Observations on the Treatment of the Menopausal Syndrome

James W. Davis, M.D., Statesville, North Carolina
Davis Hospital

WELL KNOWN to every doctor are the disagreeable symptoms, in many cases distressing, which are prone to afflict womankind in the fifth decade. The very multitude of agents which have over centuries acquired more or less repute as remedies for these symptoms indicates that none of them is to be relied on; that, like the distresses of most of the sex in former times, soon after the establishment of menstruation—vomiting of pregnancy—the condition persisted till Nature, in her own time, cured it.

But recently there have been provided remedies offering much of relief for those going through what is well called the change of life.

In the treatment of the menopausal syndrome where rapid relief from the symptoms is especially desirable we have found that by using stilbestrol orally once daily, at suppertime, and in addition giving the patient some of the natural estrogens intramuscularly, we give, as a rule, very rapid relief from the symptoms.

Recently one of the natural estrogens has been made available in aqueous solution, two milligrams or the equivalent of 20,000 units to each c.c., which preparation we have found especially useful since its action is manifested very soon after its administration, and is continued for an unusually long period of time.

Although this preparation, in common with the other natural estrogens, is quite expensive—so much so, indeed, as to be out of reach of many patients—we feel that it should be given whenever possible and in adequate dosage over a period of three to four weeks, at least, until the menopausal symptoms have subsided; and then it is advisable to continue it for a week or so.

Throughout this time stilbestrol is being given orally, and, in addition, such sedatives as may seem indicated and other appropriate treatment. By affording complete relief from these distressing symptoms attending the menopause, and affording it with great rapidity, we find that these patients are converted from an understandable rebelliousness against an unjust decree of Nature, and feel great confidence in the treatment and the knowledge that *they can get relief* which usually results in the establishment of strong confidence in what doctors can do for them, and insures excellent cooperation with their medical advisers for all future life.

Unfortunately, many patients during the menopause develop psychoses which vary from extremely mild manifestations to the more severe signs of mental disturbance. In such cases it is always urgently desirable to get the quickest possible relief from the menopausal disturbance and this often relieves the mental condition. Even though the mental condition does not clear up at once, the treatment should be continued and often later the patient will return to a practically normal condition so that she can resume her place in the family and in the community.

Every patient going through the menopause, of course, is a different problem. By far the greater number of these must be treated intensively and watched closely in order to get the most rapid and complete relief possible from the distressing symptoms.

Whenever it is possible to do so every patient who starts through the trying phase of life known as the menopause should be under medical care from the time of the earliest manifestations until she has gone entirely through this cycle of life. In this way a great deal of unhappiness could be avoided and a number of tragedies prevented.

Every woman going through the menopause deserves not only the best of medical care and attention, but the doctor should inform all the members of the family who have never had the experience of many things about this of which the average family is entirely unacquainted, and thereby prevent a great deal of unhappiness and distress and actual disruption of family ties. In addition, by taking this precaution, the estrangement of lifelong friends may often be prevented, and much unpleasantness and unhappiness and embarrassment in the family of the patient may be kept from developing, and understanding treatment of the sufferer, in some instances, may prevent infidelity on the husband's part and preserve the home.

Often there is a change of personality—a woman of a sunny disposition may become entirely morose, or the converse of this. In not a few instances, for no apparent reason whatever, these

patients become quarrelsome, not only with their own family and intimate friends, but with their neighbors and casual acquaintances. In many cases these things can be prevented by proper treatment, advice and encouragement, and the enlightenment of the family and intimate friends about the situation so that they may maintain a sympathetic attitude and interest in the patient and thereby contribute largely to the success of management over this trying period.

Only through the keen insight of the doctor who understands the menopausal syndrome and takes the patient in hand and guides her through this period of life, and at the same time elicits the sympathetic coöperation of the family and close friends, is it possible to carry a patient through the distressing menopausal period with the least possible discomfort of body and mind to the patient and to her family and friends. This problem is one which is as imporant as it is neglected.

The drug treatment offered, along with the psychological and sociological features of management, cannot fail of success in this important field of the practice of medicine and surgery.

PERCUSSION OF THE CLAVICLE: A NEGLECTED VALUABLE MEANS OF INVESTIGATION

(F. S. Miller, Spokane, Wash., in *Dis. of the Chest,* Sept.)

Few textbooks mention the subject. The bone is resonant in its central portion, tympanitic towards the sternal end, and dull towards the acromial end. Indirect precussion should be used. The resonant areas or clavicular bands are not truly central ,but nearer the sternal end of the bones. They are symmetrically placed and equal in size in individuals with normal lungs and chest cage, and in adults normally measure 4 to 6 cm. At the medial border the note changes to tympany; at the outer, to dullness. In children the inner border frequently is much nearer the sternum than in adults and at times may be medial to the sternoclavicular joint.

The borders do no regularly coincide with the lung borders or the anterior borders of Krönig's areas of reflected resonance. Infiltration of the lung produces a narrowing of the band, even if the infiltration is a considerable distance below the clavicle. With dense infiltrations the resonance of the band becomes greatly reduced.

Empsysema of the lung causes a widening of the band so pronounced tha tinfiltrations in an emphysematous lung will usually take the expansion of emphysema, rather than the contraction of infiltration.

Widening of the band is also found in pneumothorax when the apex of the lung falls below the clavicle or pulls away from the anterior chest wall. With less marked collapse, where lung structure is still present above the clavicle in apposition to the anterior chest wall, the band will show contraction.

In percussion no great care need be exercised in the position of the patient, but the clavicles should not be forcibly elevated or pulled backward. The plexímeter finger should be placed with firm pressure at right angles to the bone. Percussion should start in the resonant portion and move in either direction. Approaching the borders the pleximeter should be moved little by little by sliding the skin over the bone rather than by raising the finger from the surface of the skin.

Occasionally large cavities widen the band, pleural thickening over the extreme apex, with but little subpleural infiltration, may not produce the expected contraction of the band. The bands may widen slightly after expiratory cough and forcible respiration, so when in doubt examine again after auscultation.

It is to be regretted that the current medical literature seems more and more to preach the inadequacy of physical examination in early pulmonary disease. Possibly hurried percussion in noisy examining rooms explains the general lack of results from this time-tested procedure. Adding clavicular percussion to the percussion of Krönig's isthmi and careful percussion of corresponding areas, fewer infiltrations will pass unrecognized. Percussion of the clavicles has been particularly helpful in examining severely ill bed patients where the accessibility of the bones provides a great advantage over the awkwardness of percussing the neck for Krönig's borders. In emphysema the sign brings to mind at once the condition of hyperventilation. In instituting a pneumothorax at home where the fluoroscope is not available, the widening of the band, signifying a successful apical collapse, is most welcome.

GLAUCOMA

(W. L. Benedict, Rochester, Minn., in *Med. Record & An.,* June

When nonsurgical measures are not effective in preventing high intraocular tension, surgical intervention is required. When nervous strain is minimized and the tenor of life is made as even as possible, episodes of ocular hypertension are often diminished in frequency and in degree. In many cases, compensated glaucoma may be held under control indefinitely by gienic measures and the use of miotic agents. Many eyes, however, are permitted to become blind through inadequate response to medical treatment that could have been operated on with a high probability of subsequent retention of useful vision.

The results of treatment of acute incompensated glaucoma, surgical as well as nonsurgical, are not gratifying. An eye that is deeply congested and hard does not react well to miotic agents, even when they are used in strong solution, nor is it in a suitable condition for operation. Continued pain that does not respond to sedative agents can be relieved only by reduction of the tension, so surgical intervention is urgently required.

It is for compensated or chronic simple glaucoma that most operations have been devised. When a patient comes complaining of his eye or eyes always *think* of glaucoma.

ANESTHESIA DEATHS

(John Lyford, III, *et al.,* in *Bul. Johns Hopkins Hosp.,* June)

Anesthetic deaths are not often reported. The records of patients to whom 51,392 general and spinal anesthetic agents were administered in the Johns Hopkins hospital, 1931-1940,, were examined to determine the incidence and causes of deaths occurring in the operating rooms.

The incidence of deaths was 75, 1.5 per 1000 anesthetics. Of these, 55 were unrelated to the anesthesia. No single cause could be assigned for the 20 deaths which seemed to be related to anesthesia: 9 were apparently unavoidable; 11 might have been avoided; obstruction in the main respiratory passages in 4, edema of the larynx in 1, and regurgitation and aspiration of gastric contents in 3 patients whose stomachs had not been emptied preoperatively because of the emergency of the occasion.

Three deaths were apparently due to the way in which inhalation anesthesia was given and three other deaths may have resulted from faults in administration of spinal anesthesia.

Understanding the Alcoholic*

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INDIVIDUALS who do not stop drinking, either because they cannot or do not wish to do so, and whose behavior resulting from drinking interferes with their important life activities, are looked upon as chronic alcoholics or alcoholic addicts by the psychiatrist. Although in recent years more and more interest has been shown in individuals with this problem, one still finds widespread lack of understanding on the part of both the laity and the medical profession as regards the nature of the problem and the proper procedure to follow in dealing with it.

Many continue superficially to treat the symptom, alcoholism, rather than the underlying illness, which is the personality reaction of the individual to life, plus habit-formation; or, as Diethelm says, "In chronic alcoholism we deal with a habit-formation which is due to various psychobiologic difficulties." The selection of the type of treatment depends partly on the patient's make-up and condition and partly on his life situation at the time. The handling of the alcoholic therefore should always be based on the study of each individual as presenting a separate problem.

All patients should not be treated alike as one usually finds in many of the mass treatment "alcohol drink cures." Before therapy is decided upon, a complete investigation of the patient should be made by obtaining all the available facts through a biographical history from birth to the present. This investigation should cover his place in the family; developmental data; presence or absence of disturbing behavior in childhood; adjustment in school, vocation and marriage; sexual life and its complications; religious habits and feeling; financial status; family situations and emotional attitudes toward them; and formal mental-status studies of general behavior, stream of activity, mood, special preoccupations, sensorium, and intellectual resources and insight. A physical, and especially a neurological examination, should be made to determine the presence of any organic disease. A partial or more detailed personality study summing up the patient's assets and liabilities should then be prepared. The family and other relatives should be interviewed for additional helpful information. The material thus obtained and studied should then be used as an aid in determining why this person drinks and what treatment approach should be made.

My own studies reveal the following apparent reasons for an individual's excessive use of alcohol:

1. As an escape from situations of life which he cannot face.
2. As evidence of a maladjusted personality (including sexual maladjustments).
3. As a development from social drinking to pathologic drinking.
4. As a symptom of a major abnormal mental state, such as a depressive or schizophrenic reaction.
5. As an escape from incurable physical pain.
6. As a symptom of constitutional inferiority—a psychopathic personality; *i.e.*, an individual who drinks because he likes alcohol, knows he cannot handle it, but does not care.

Many times one cannot determine any great and glaring mechanisms as the basis of why the drinker drinks; but the revealing fact may be elicited that alcohol is taken to relieve a certain vague restlessness in the individual incident to friction between his biologic and emotional make-up and the ordinary strains of life.

In selecting the type of treatment for a patient, the psychiatrist determines to which of the following types the individual belongs:

1. The individual who desires to abstain but who is unable to do so of himself. This patient has the desire to abstain and his life habits and contacts are not too bad; he has good intelligence and some maturity. This patient is to be handled by outside, office practice psychotherapy.
2. The individual who desires to abstain but is unable to do so of himself, who has very poor habits and contacts, good intelligence and some maturity, should be placed in a rest-home farm where psychotherapy including help and guidance away from his contacts is started.
3. The individual with good intelligence, rather immature, who should abstain but does not desire to do so. Most members of this group have poor habits and contacts. This patient should be placed on an alcohol farm, or in a

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sanitarium or hospital provided by the Inebriate Act, for a definite length of time.

4. Korsakoff's phychosis and alcoholic deteriorated patients should be treated in mental hospitals permanently.
5. Individuals with delirium tremens and acute hallucinosis should be placed in acute psychopathic hospitals and there studied in the way described for future handling.
6. Feeble-minded individuals with history of repeated commitment to the workhouse or house of correction, after careful examination, should be handled by the penal system.

Chronic alcoholics should not, of course, be treated in general hospitals. When they are sent to such hospitals by physicians, the treatment consists in most cases in desaturating them and preparing them for another bout. Likewise, State mental hospitals are not suitable places for the treatment of alcoholic addicts, but in order to prevent the patient from harming himself and others; *i.e.,* to protect the patient, his family and the community, a procedure which is often necessary. The present discussion of hospital treatment pertains, therefore, to individuals who do not voluntarily appeal for help and to individuals who have delirium tremens, acute hallucinosis etc. In the State mental hospitals not very much is usually accomplished, although the individual is kept away from alcohol and likewise away from the situations which he feels have been factors in his drinking, such as irritating home and business situations and provocative associations. Besides this, an educatitve process occurs through his seeing the end results in permanent damage to other patients' brains. As a result of these factors, together with the possibility of his obtaining good rapport with one of the staff psychiatrists, there will occasionally develop a marked change of attitude and subsequent insight into his problem. At this stage, which requires at least six to nine months to reach, the patient is ready for what is discussed in this paper under the heading Extra-Mural Treatment.

Much more often than not, of course, a person who is sent to a State hospital by commitment, or under the Inebriate Act, gets nothing out of the hospitalization, develops resentment against everyone connected with the procedure and proceeds to start on a drinking spree soon after release.

Modern private psychiatric hospitals in which the physicians have sufficient time to study the patient carefully and in which a thorough investigation of the personality with due attention to the physical status is made, help more patients than is usually believed to be the case. At such hospitals personality factors which cause the use of alcohol and its habit-formation are often elicited, and reëducation along individual lines is started while the patient is still in a protective environment.

Only voluntary patients of average intelligence, and whose brains are not permanently damaged, are selected for treatment at a farm. This should be a non-institutional arrangement, rather isolated, away from taverns, saloons etc. The farm should offer persons in temporary need of a protective environment an opportunity to learn that they can live without alcohol by actually living without it under non-institutional conditions approximating those of normal life. The treatment approach involves: (1) giving patients an understanding of the nature of their problem and an insight into the causes of their drinking while protecting them temporarily against the strains and alcoholic influences of their customary environments; (2) helping them to discover other ways of dealing with the life situations and emotional demands underlying their desire to drink; (3) helping them to develop a new pattern and rhythm of life through a planned routine of daily activities and by building up their moral and physical health with pleasant surroundings, good food, formal relaxation practice and outdoor exercise; (4) suggestively directing their interest and thought association processes into new channels and diverting their thoughts and feeling away from the whole problem of alcohol; (5) reëducation along common-sense lines involving certain views, attitudes and insights into the problem.

The treatment should be of a highly individual nature and should be undertaken with kindness and sympathy that eliminate ideas of punishment, fears of failure and attitudes of inferiority from the patient's mind. All members of the staff should be abstainers. The detailed method and study should be along the lines discussed under the next topic.

The treatment involves the individual study and personality formulation and treatment of the patient through distributive analysis and synthesis. This, of course, is preceded by a biographical history of the patient, formal mental-status studies, and a physical examination, including a neurological survey. Distributive analysis is the most natural approach to the correction of personality difficulties on a psychobiologic basis. The goal of treatment is the synthesis of the various factors and strivings which will offer the patient security. In this, the patient's symptoms are considered and evaluated, his problems are talked over, and his memories, imaginings, urges, strivings, attitudes and actions and reactions to situations are thoroughly discussed. In this way the physician distributes the analysis along the various lines indicated by the symptoms, complaints and problems.

The physician translates general principles of living into concrete, simple, practical methods of altering life patterns and situations. In this way the patient, through a systematic ventilation, objectifies his problems and becomes desensitized to certain topics and factors. Through analysis one becomes aware of one's shortcoming and failures and the physician, therefore, must take a guiding hand in seeing that constant attention be paid to synthesis, and thus make constructive use of what has been obtained through the dissecting procedure.

Personality disciplining, the teaching of intellectual domination to replace mood domination, the study and guidance of the minutiae of life day by day through the analysis of concrete individual experiences, and the discussion of the personality liabilities of the past are covered in the interviews.

In order to determine whether or not a person is drifting from social drinking into pathological drinking, the following thirty-five test questions, based upon analyses of behavior leading up to chronic alcoholism in hundreds of cases, and providing a fairly reliable basis for appraising the dangers involved in drinking, may be used:

1. Do you require a drink the next morning?
2. Do you prefer to drink alone?
3. Do you lose time from work due to drinking?
4. Is your drinking harming your family in any way?
5. Do you crave a drink at a definite time daily?
6. Do you get the inner shakes unless you continue drinking?
7. Has drinking made you irritable?
8. Does drinking make you careless of your family's welfare?
9. Have you become jealous of your husband or wife since drinking?
10. Has drinking changed your personality?
11. Does drinking cause you body complaints?
12. Does drinking make you restless?
13. Does drinking cause you to have difficulty in sleeping?
14. Has drinking made you more impulsive?
15. Have you less self-control since drinking?
16. Has your initiative decreased since drinking.
17. Has your ambition decreased since drinking?
18. Do you lack perseverance in pursuing a goal since drinking?
19. Do you drink to obtain social ease? (In shy, timid, self-conscious individuals.)
20. Do you drink for self-encouragement? (In persons with feelings of inferiority.)
21. Do you drink to relieve marked feeling of inadequacy?
22. Has your sexual potency suffered since drinking?
23. Do you show marked dislikes and hatreds since drinking?
24. Has your jealousy, in general, increased since drinking?
25. Do you show marked moodiness as a result of drinking?
26. Has your efficiency decreased since drinking?
27. Has drinking made you more sensitive?
28. Are you harder to get along with since drinking?
29. Do you turn to an inferior environment while drinking?
30. Is drinking endangering your health?
31. Is drinking affecting your peace of mind?
32. Is drinking making your home life unhappy?
33. Is drinking jeopardizing your business?
34. Is drinking clouding your reputation?
35. Is drinking disturbing the harmony of your life?

If a person is able truthfully to answer *No* to all of the foregoing questions, you can be reasonably sure that alcohol presents no immediate problems for him; but even one *Yes* is a significant warning, and more than one affirmative answer constitutes a serious danger sign. For, once a person becomes a pathological drinker, he can never again become a controlled drinker; and, from that point on, is limited to just two alternatives: (1) total permanent abstinence; or, (2) chronic alcoholism with all of the handicaps and penalties that it implies.

A general understanding not only of the steps involved in the rehabilitation of a chronic alcoholic, but also of the nature of the problem that chronic alcoholism presents, may be obtained from the following list of insights, views and attitudes which must be developed in the course of successful treatment:

1. He must be convinced from his own experience that his reaction to alcohol is so abnormal that any indulgence for him constitutes a totally undesirable and impossible way of life.
2. He must be completely sincere in his desire to stop drinking once and for all.
3. He must recognize that the problem of drinking is, for him, not merely a problem of dissipation, but of a dangerous psychopathological reaction to a (for him) pernicious drug.
4. He must clearly understand that once a man has passed from normal to abnormal drink-

ing, he can never learn to control drinking again.

5. He must come to understand that he has been trying to substitute alcoholic phantasy for real achievement in life, and that his effort has been hopeless and absurd.
6. He must recognize that giving up alcohol is his own personal problem, which primarily concerns himself alone.
7. He must be convinced that at all times and under all conditions alcohol produces for him, not happiness, but unhappiness.
8. He must come to understand that the motive behind his drinking has been some form of self-expression, some desire to gratify an immature craving for attention, or to escape from unpleasant reality in order to get rid of disagreeable states of mind.
9. He must understand that alcoholic ancestry is an excuse, not a reason for abnormal drinking.
10. He must realize that any reasonably intelligent and sincere person, who is willing to make a sustained effort for a sufficient period of time, is capable of learning to live without alcohol.
11. He must fully resolve to tell the truth and the whole truth, without waiting to be asked, to the person who is trying to help him—and must be equally honest with himself.
12. He must avoid the small glass of wine—*i.e.*, the apparently harmless lapse—with even more determination than the obvious slug of gin.
13. He must never to be so foolish as to try to persuade himself that he can drink beer.
14. He must never be so childish as to offer temporary boredom as an excuse to himself for taking a drink.
15. He must disabuse his mind of any illusions about alcohol sharpening and polishing his wit and intellect.
16. He must learn to be tolerant of other people's mistakes, poor judgment and bad manners, without becoming emotionally disturbed.
17. He must learn to disregard the dumb advice and often dumber questions of relatives and friends, without becoming disturbed emotionally.
18. He must recognize alcoholic day-dreaming —about past good times, favorite bars etc. —as a dangerous pastime, to be inhibited by thinking about his reasons for not drinking.
19. He must learn to withstand success as well as failure, since pleasant emotions as well as unpleasant ones can serve as good excuses for taking a drink.
20. He must learn to be especially on guard during periods of changes in his life that involve some emotion or nervous fatigue.
21. He must try to acquire a mature sense of values and learn to be controlled by his judgment instead of his emotions.
22. He must realize that in giving up drinking he should not regard himself as a hero or martyr, entitled to make unreasonable demands that his family give in to his every whim and wish.
23. He must beware of unconsciously projecting himself into the role of some character in a movie, book or play who handles liquor like a gentleman, and of persuading himself that he can—and will—do likewise with equal impunity.
24. He must learn the importance of eating—since the best preventive for that tired nervous feeling which often leads to taking a drink is food—and must carry chocolate bars or other candy with him at all times to eat between meals and whenever he gets restless, agitated or tired.
25. He must learn how to relax naturally, both mentally and physically, without the use of the narcotic action of alcohol.
26. He must learn to avoid needless hurry and resultant fatigue by concentrating on what he is doing rather than on what he is going to do next.
27. He must not neglect care of his physical health, which is an important part of his rehabilitation.
28. He must carefully follow a daily self-imposed schedule which, conscientiously carried out, aids in organizing a disciplined personality, developing new habits for old and bringing out a new rhythm of living.
29. He must never relax his determination or become careless, lazy, indifferent or cocky in his efforts to overcome his desire for alcohol.
30. He must not be discouraged by a feeling of discontent during the early stages of sobriety. He must turn this feeling into incentive to action which will legitimately satisfy his desire for self-expression.
31. He must not drop his guard at any time, especially not during the early period of his reorganization, when premature feelings of victory and elation often occur.
32. He must understand that, besides abstinence, his real goal is a contented and efficient life.

33. He must appreciate the seriousness of his reëducation, and regard it as the most important thing in his life.
34. He must realize that most people seeking psychological help for abnormal drinking are above average in intellectual endowment, and that, while drinking means failure, abstinence is likely to mean success.
35. He must never feel that any of these reeducational guides is in any way inconsequential, or secondary to business, play, or whatnot; and must conscientiously observe every one of them, day in and day out.

Summary and Conclusions

1. Persons who do not stop drinking, whether because they are unable to do so or do not wish to do so, and whose behavior resulting from drinking interferes with their important life activities, are considered to be alcoholic addicts from the point of view of the psychiatrist.

2. In general, whether one regard alcoholism as evidence of an escape from reality, of an intense urge for excitement, of a neurotic or psychotic reaction, of latent or overt homosexuality or of self-destructive tendencies; one must conclude that it always represents the psychobiological reaction of an individual personality to life and life situations, plus habit formation with respect to emotional reactions and the use of alcohol.

3. Contrary to some opinion, all alcoholism is not hopeless of cure.

4. Selected voluntary patients of average intelligence, undamaged brains, and some emotional maturity offer reasonable hope of successful rehabilitation.

5. Successful rehabilitation involves the following important factors: Personality of the psychiatrist; careful selection of patients; psychiatric analysis and therapy; reëducation along commonsense lines involving certain views, attitudes and insights; physician-patient interpersonal relationship; suggestive influences; and follow-up for psychological reconditioning.

6. The psychiatric approach requires study of each individual as such, so that one attempts to interpret behavior and not to judge conduct.

7. A patient cannot be treated against his will.

8. Immediate withdrawal of alcohol is psychologically important.

9. Total permanent abstinence—from *all* alcoholic beverages—is the only possible practical goal of therapy.

10. Successful rehabilitation requires, at least, many months of active therapy and subsequent follow-up.

11. The psychiatric approach involves bringing to light the constitutional, personality and situational factors responsible for the development of alcoholism, and employing constructive measures to correct, modify, or teach acceptance of, the unmodifiable factors.

12. The psychiatric approach further involves prolonged reëducation (including personality disciplining and teaching intellectual rather than emotional control of behavior) with well-organized and varied activities in the patient's daily life.

13. The treatment includes interviewing relatives and associates of the patient to give them some understanding of the nature of the problem and thus to prevent them from disturbing the patient emotionally during the early months of treatment.

14. The real solution of the problem of alcoholic addiction lies in preventive measures based on a general recognition on the part of society that alcoholic addiction is neither a moral nor a legal problem, but a problem of individual personality reaction to a specific drug.

METASTASES SECONDARY TO MAMMARY CANCER

(W. E. Howes & L. Bernstein, Brooklyn, in *Radiology*, May)

The conclusion that after cancer of the breast has spread to other parts of the body the prognosis is hopeless is even today firmly maintained by some members of the medical profession. The improvement following direct irradiation of the involved parts in a series of patients with distant metastases treated at the Brooklyn Cancer Institute means that much that is valuable can be done in such cases.

The commonest site of metastases from mammary carcinoma is bone. Pain, an early symptom, is usually well localized and aggravated by motion or pressure. These metastases respond to irradiation by recalcification, appearance of new-bone formation, and healing of pathologic fractures. Referred pain of spinal involvement is often relieved by one or two irradiation treatments to the affected spinal segment.

Mediastinal involvement may paralyze one of the recurrent laryngeal or phrenic nerves, or by pressure upon the esophagus produce dysphagia, in which case only moderate symptomatic relief may be expected from irradiation therapy. Used in cases of pulmonary and pleural metastases, the irradiation dosage must be such as to prevent serious changes in the surrounding lung.

Until the mass is palpable, intraäbdominal metastases are difficult to diagnose. Except for those in the liver, visceral metastases are often improved by direct irradiation.

In a group of 124 women with widespread metastatic involvement, 83 received adequate irradiation to at least some of the lesions. These 83 patients lived an average of 20 months as compared with an estimated five months' survival period for the untreated group.

Apparently flaps when transplanted from a distance have a distinct inhibitory effect upon basal-cell cancer. Just how deep this inhibitory effect extends it is difficult to say—probably an eighth to a fourth inch. This suggests a new principle for the treatment of intractable basal-cell cancers that have not been cured by other measures.—J. Shelton Horsley.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

THE DIAGNOSIS OF RECURRENT GOITER WITH HYPERTHYROIDISM

The diagnosis of recurrent hyperthyroidism is one that requires a great deal of care. A very careful examination is necessary to rule out any other possible cause of the symptoms manifested by this condition. Following years of hyperthyroidism, even though thyroidectomy has removed the original cause, a patient who is not naturally nervous may still for a long time present symptoms suggesting hyperthyroidism, and there may even be an increase in the basal metabolic rate.

After excluding any of the more likely causes of symptoms simulating hyperthyroidism our attention is turned to the thyroid gland itself. Careful palpation with the head in various positions, noticing especially if there are any enlargements in the thyroid area demonstrable on deglutition, will usually detect any small enlargement that may be present.

While a small adenoma may cause actual symptoms of hyperthyroidism, yet we must use extreme care in making a diagnosis of the condition, because of the fact that a recurrence after the usual thyroidectomy is not likely. So many conditions may affect the rate that only after at least three basal metabolisms on three successive days can we feel that we have an accurate estimate of the rate.

In addition to this, we should have a careful examination of the throat, vocal cords and sinuses. The temperature should be taken over a period of several days with undulant fever especially in mind. This itself may simulate hyperthyroidism in that there is a greatly increased metabolic rate, and increase in the pulse rate.

Only by ruling out every other possible source of symptoms simulating hyperthyroidism can we feel that we have made an accurate and complete diagnosis, and only after this is done should operation be advised. In cases in which there is a definite hyperthyroidism, surgical treatment should be carried out at the earliest possible time, but even in these cases the patients must have proper preoperative preparation.

PANCREATITIS

Inflammation of the pancreas occurs more frequently than is ordinarily supposed. Because of the fact that it is not thought of as often as gallbladder disease, duodenal ulcer, or appendicitis, it is sometimes overlooked.

Acute pancreatitis varies all the way from that in which the symptoms are so mild as to attract little attention to the more severe cases with extensive involvement of the organ, agonizing pain and profound shock. Those severe attacks which are recovered from are commonly followed by abdominal pains over a long period of time, digestive symptoms, occasional attack of nausea, sometimes a little vomiting, and loss of weight.

Mild cases found in the course of an operation on some other organ usually present a moderate enlargement and congestion of the head of the pancreas. In the more pronounced cases, in addition to pain in the upper abdomen with moderate rigidity, the attacks of pain may become agonizing at times. There is nausea and sometimes vomiting and, if the attack is very severe, rapid pulse and signs of shock, fever, leucocytosis and usually albuminuria. The upper abdominal tenderness and rigidity may be so great as to simulate that of perforation of a pyloric ulcer. If the abdomen were opened at this time there would be found areas of fat necrosis and great enlargement of the head of the pancreas.

According to Foged diastase in the urine above 300 units usually indicates a pancreatitis. It may go as high as 1200 units.

In most instances medical treatment, until the acute stage is passed, is best. There are some cases which demand immediate operation. Delaying operation, however, will usually give better results than operation in acute states. Medical treatment, except in the fulminating type of pancreatitis, is usually very satisfactory. The patient should have sufficient morphine for pain and be kept in the Fowler position. There should be elimination by enemas and, if necessary, by gastric lavage. Some cases require glucose by vein, some a small amount of insulin. Plenty of fluids are important. Blood transfusions are a great help at times. One of the sulfonamid drugs may be given, but always with caution.

Surgical treatment is best instituted after the acute stage is passed and patient is in better condition to stand operation.

The causes of pancreatitis vary. Many cases are caused by blood stream infection; others by obstruction in the ampulla of Vater, which causes a back flow of bile into the head of the pancreas. Another cause is direct extension of infection from a duodenal ulcer which may become attached to the head of the pancreas, and infection extend directly from the duodenum.

It is not always easy to differentiate between acute pancreatitis, acute cholecystitis, common duct stones, and perforation of a duodenal ulcer in the posterior wall of the duodenum or head of the pancreas. Even an appendix lying in a retrocecal

(*Continued to page* 574)

DEPARTMENTS

UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

TESTICULAR BIOPSY IN THE DIAGNOSIS AND TREATMENT OF STERILITY IN THE MALE

MAN is tremendously interested in the retention of his fertility, much concerned over a threat of sterility. However undesirious he may be to beget children, he is made unhappy by even the thought that he may not be competent to do so. He has been this way a long time, as witness Moses' boast that he "was an hundred and twenty years old . . . and his eye was not dimmed *nor his natural force abated.*"

Absolute sterility in the male, denoted by absence of spermatozoa in the semen, may be due to either of two causes—failure by atrophic testicles to form any substantial number of sperms, or prevention of escape of the spermatozoa from the seminal tract by some defect, such as thickened epididymes. It is essential for correct management that the cause of sterility be determined with accuracy, but, as Hotchkiss[1] has pointed out, a man may have azoöspermia yet his genitalia appear normal on external examination.

One diagnosis is well said to be worth ten haphazard treatments and by testicular biopsy in many cases diagnosis may be made. It is a reliable and practical method of determining whether there is, in fact, a complete degeneration of germinal tissue,, under which condition treatment is futile, or, alternatively, whether a defect of structure is the cause of the degenerative change. For the latter condition agents designed to stimulate spermatogenesis would be contraindicated.

Describing this new diagnostic method briefly: The genitalia are prepared for operation and a small area in the scrotal skin anesthetized with 1 per cent novocain. An incision is carried down through the tunica vaginalis and a pair of palpebral retractors inserted. A V-shaped incision is then made in the tunica albuginea so exposed, and a minute piece of testicular tissue excised. The procedure is repeated on the opposite side and the excised tissue fixed in Bern's solution and a section prepared.

Though the degree of cellular activity may vary in each section, the "general contrast is striking and offers little chance of serious confusion" between healthy and degenerate tissues.

Examples of those conditions revealed in particular cases of sterility are spermatic cells arrested at the spermatid stage, germinal epithelium arrested at an early stage, tubules devoid of germinal epithelium or surrounded by excessive fibrous tissue.

In the successful treatment of sterility three essential criteria are involved:

(1) the recognition of the cause
(2) the presence of specific and potent therapeutic agents, and
(3) a refractory end organ.

There are four causes of faulty spermatogenesis, proved or postulated:

(1) Inherited gametogenic factor, for which treatment would be futile.
(2) Deficiency disease, such as might be due to an inadequate vitamin supply. Little encouragement is found in the results of treatment with corrective diets.
(3) Disturbance of the endocrine system with which it is known that the gonads are linked. It is difficult to make clinical application of the experimental work done on animals as different species do not respond alike to therapy; moreover, specific therapeutic products are not available.
(4) Constitutional and local disorders (such as those induced by fever or debilitating illness) may arrest spermatogenesis.

It is not claimed that examination of biopsied testicular tissue renders it immediately possible to place the sterile male in one of these four classes, but that it will help substantially in removing some of the difficulties of diagnosis and, by so doing, suggest a line of approach to the problems of management.

Occlusion of the seminal passage, plus faulty spermatogenesis, may cause absolute sterility. Biopsies in these cases demonstrate fairly normal spermatogenesis (supporting the theory that the epididymes can absorb spermatozoa). Obstruction or congenital anomaly of the efferent tract is then inferred and operation is indicated. Scrotal contents are exposed, and patency of the vas is tested by injecting fluid into its lumen at a level with the epididymis. If the vas is patent and sperms are found, then a union of the two structures is formed using arterial silk sutures. Sperm should appear in the ejaculate within twelve months.

This second operation has a 20 per cent chance of success. Failure may be due either to extensive obstructions along the vas, to postoperative closure of the fenestra, or to sperm being too few or too sluggish. Few men are to be found who are unwilling to accept even this small chance, unattractive as the odds would be were anything other than "manhood" or life itself at stake.

1. Hotchkiss, R. S.: Testicular Biopsy in the Diagnosis and Treatment of Sterility in the Male. *Bulletin N. Y. Academy of Medicine*, Sept., 1942.

Developments in research promise much for the future in the efficient treatment of sterility in the male.

RESPIRATION PYELOGRAPHY IN THE DIAGNOSIS OF PERINEPHRIC ABSCESS

Both the clinical and röntgenological diagnosis in the early course of this condition can be extremely difficult. The authors[1] feel that this procedure will assist in earlier diagnosis.

Some contend that the movement of the kidney with respiration should be studied in all cases. Accurate recordings show the average up-and-down excursion of each kidney to be 2.75 cm., side-to-side 0.33 cm. (in this direction the lower pole slightly more movable than the upper).

Careful instruction must be given in the manner of breathing—essentially abdominal, the body position not to be changed. Bilateral pyelography is essential, since accurate film interpretation requires a means of comparison.

The usual plain film is taken followed by the bilateral pyelogram. The catheters are plugged after injection of the material and only rarely is refilling of the renal pelvis necessary. The third film is exposed twice: first at the end of extreme inspiration, second at the end of extreme expiration. Each exposure is 75 per cent of the intensity of a single exposure. This results in a slight over-exposure of the film, of minimal importance. Normally the result is a double pyelo-ureterogram. However, in perinephric involvement the affected kidney being fixed a single pyelo-ureterogram is shown. Contralaterally the double shadow is present and this lends a basis for comparative study.

Any inflammatory change in the perirenal fascia or adipose tissue will hinder the normal renal mobility, e.g., those cases of kidney infection in which the inflammatory process has penetrated the cortex and involved the surrounding tissue. Any evidence of fixation might also be of value in giving advance notice of extensive perirenal adhesions and possibly a more difficult surgical procedure. Renal fixation has been seen in cases of gallbladder disease and some report lumbar scoliosis as a factor.

Diaphragmatic motion is also of importance in any consideration of movement of the kidney. It must be normal in order to obtain a proper evaluation; but, even in a case of perinephric abscess, it does not become immobilized unless the abscess is subdiaphragmatic. Phrenic nerve section, pleurisy, severe liver infections interfere with the normal movement of the diaphragm. In this group of cases the study would be of slight if any value.

The greatest value of this procedure is in perinephric abscess and no gross involvement of the kidney itself. In many of these cases physical signs and symptoms make the diagnosis evident. In these cases respiration pyelography would only serve as a substantiation of the other findings. However, in many cases the early signs and symptoms are clouded so as to make the diagnosis doubtful. It is then that this procedure would have its greatest value.

1. L. E. Pierson and E. M. Honke, *Journal of Urology*, May.

TUBERCULOSIS

J. Donnelly, M. D., *Editor*, Charlotte, N. C.

WAR AND TUBERCULOSIS

Although in the last few years some new theories have been offered as to the epidemiology of tuberculosis, nothing has yet appeared to nullify the theory that any factor which reduces the physical resistance of the individual, or the masses of the general population, will increase the incidence of the disease and facilitate the transmission of infection. That war with its physical and mental strain, reduction in food supply, concentration of masses of the population etc., causes increase in the incidence of tuberculosis has been frequently shown. The tuberculosis death rate in the United States in 1900 was more than 200 per 100,000 of the population. In 1941 this rate had decreased to an all-time low of 45. It is doubtful if our most strenuous efforts can maintain this rate in the post-war period.

In his Presidential Address at the 1942 meeting of the American College of Chest Physicians Dr. Goldberg discussed this "present-day problem in tuberculosis." Only an estimate of the tuberculosis mortality throughout the world can be made. Data are not available on more than a third of the world's population. With such incomplete statistics and the knowledge of group studies in death rates, it has been estimated that the average present death rate from tuberculosis is 90 per 100,000 population. In the period of a lifetime, under ordinary circumstances, at least 8 per cent of all deaths are due to tuberculosis. War and its consequences have always caused an increased morbidity and mortality from tuberculosis.

During World War No. I mortalities doubled, even trebled, in various European cities. In the present war in England, Scotland and Wales, for the three years 1939 to 1941 there has been an increase of more than 15 per cent in tuberculosis mortality. In France incomplete reports from the larger cities indicate an increase of 30 per cent in the tuberculosis mortality for the first six months of 1941.

It is worthy of note that tuberculosis is still the

first cause of death in the United States in the age group 15 to 35 years—the group which includes the majority of those in the armed forces and a large percentage of defense plant workers. This fact emphasizes the importance of more concentrated effort to maintain the health of this age group particularly.

Dr. Goldberg gave as the three most important factors in the achievements of the low mortality in this country the following:

(1) The detection of the tuberculous patient with a sputum positive for tubercle bacilli, and controlling that patient, or his disease, so that he is not capable of further spreading the infection.

(2) The building and development of many institutions where infectious individuals may be housed and treated to prevent the spread of infection.

(3) The work of the veterinarians in eradicating tuberculosis in cattle. This has resulted in there being at present less than one-half of one per cent of infected cattle among those housed for dairy purposes. Almost none of the milk sold in this country now contains tubercle bacilli; as a result the non-pulmonary forms of tuberculosis have almost disappeared.

The reduction of mortality in this disease has improved the physical resistance of the people of this country. This, according to Dr. Goldberg, has resulted from three factors.

(1) Improved knowledge of dietetic requirements, and the basic constituents of foods, including vitamins and mineral salts.

(2) Recognition of the importance of adequate housing.

(3) A better realization of the evils of mental and physical fatigue, and the importance of a happy outlook.

Dr. Goldberg says those in the present age group of fifty years and over correspond to the young people of the years when tuberculosis infected the majority of the inhabitants of the country.

With the country in an all-out war effort, the induction of masses of young men into the armed forces and of more and more workers into the ranks of industry, it is essential that the national leaders appreciate the importance of supplying an adequate diet and that it is possible to exceed the reasonable limits of fatigue.

X-ray examinatiton of the chest is the best method of detecting tuberculosis, particularly when minimal. Since this method was rarely used in World War No. 1, many young men with tuberculous lesions were passed into the armed services, only to break down with advanced disease later under the hardships of service. These diseased service men have cost the taxpayers of the country many millions of dollars. The present method of examining the chest of every inductee by x-ray will save the taxpayers money, and will find many cases of previously unrecognized tuberculosis while they are still in the curable stage. Also, many with old arrested lesions may be put under observation to avoid, if possible, future breakdowns. The workers in industry should receive the same careful medical supervision as the men in the armed forces. All recognized infected cases should be reported to the public health authorities for further supervision. In war time when food supplies become lessened it is always the ordinary citizenry who first feel the effect. Hence, it is in the hands of the medical profession to keep the physical fitness of the individual at the highest possible point.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

SYMPTOMS IN THE CIVIL POPULATION ENGENDERED OR AUGMENTED BY THE EFFECTS OF WAR

WAR, in addition to producing varied medical problems among the combat forces, likewise engenders or augments various symptoms in the civil population. In the latter such symptoms are common particularly amongst those possessed of an unstable nervous system and those physically depleted. Since the beginning of the present war the writer has seen in his field of work an increasing number of patients who show the effects of worry, mostly parents and those of the 20- to 30-year age group, for reasons that are obvious.

Physicians in all branches of medicine should give some credence to this viewpoint for the duration and for a period after the peace in a comprehensive study of the emotional trends of their patients, many of whose symptoms are predicated upon their individual reactions to the effects of war.

In the writer's field of work a careful history and analysis of the patient often elicits the fact that the symptoms complained of are based upon worry, phobias, loss of sleep, loss of appetite and their nervous and physical sequelae and not the result of organic disease. In these patients subjective symptoms predominate, such as headache, lassitude, weariness, easy fatiguability, nervous instability and visual disturbances, and are objectively demonstrated by evidence of neurocirculatory asthenia, poor accommodation and convergence, dilated pupils, transient visual deficiency,

eczematous episodes of the eyelids, face and other portions of the trunk and limbs, without evidence of organic disease. If referable to the eyes many show no refractive error or disease of these organs. Too, many of those who for years have had a refractive error of known quantity with vision corrected to normal with glasses and who have had no untoward symptoms, and who on analysis show no change in this refractive index, now complain of many eye symptoms not heretofore experienced. A few are encountered who for two reasons magnify their symptoms without medical basis: one group made up of those disinclined to be uprooted from civil pursuits and injected into the service; the other of those who fear they may not be able to meet the visual requirements for a desired commissioned branch of the service.

If physicians as a whole are not on the alert concerning these probabilities especially when applicable to that type of personnel available for defense work and for the armed services, they are in a position to labor adversely to the best interests of the country.

DERMATOLOGY

J. Lamar Calloway, M.D., *Editor*, Durham, N. C.

ULCUS HYPOSTATICUM

Stasis ulcer is frequently preceded by a varicose or stasis dermatitis which tends to follow gravitational congestion of the lower extremities. Pruritis, often of severe degree, tends to produce excoriations which in turn often lead to a traumatic dermatitis. This condition may persist due to lowered local resistance produced by poor venous return and oxygen want. This circulatory disturbance is usually due either to thrombophlebitis, to lymphatic obstruction, or to both. Not uncommonly secondary infection and ulceration follow. Trauma is the most common precipitating cause of an ulcer. The use of the term varicose ulcer is unwarranted, since many patients with stasis ulcers do not have varicosities and most patients with varicose veins do not have ulcers. When ulceration occurs, the lesion is apt to be oval with its long axis parallel to that of the leg. The appearance of the ulcer depends largely upon nutrition as well as other factors. Examination may reveal bright red granulation tissue over the surface of the lesion; or, as is frequent in the more chronic ulcers, the base may be pale, smooth or crusted. In cases of neglect, putrid secretions often cover the involved area.

Most such lesions are exquisitely tender. In cases in which there is much pain it is well to search for evidence of thrombophlebitis. Varicose ulcers most commonly involve the inferior third of the lower extremities, particularly the left leg in the region of the internal malleolus. On healing an atrophic, non-contractile scarring remains.

Diagnosis is usually established with the history of chronicity, evidence of impaired circulation, and typical location, as well as by the nature of the lesion itself. Ulcers due to sickle-cell anemia, fungus infection, pyoderma, tuberculosis and late syphilids may at times be confused with stasis ulcer.

Treatment is directed primarily to the underlying stasis. Bed-rest with elevation of the affected extremity is ideal. Locally, during the daytime 1: 4000 postassium permanganate or one-half per cent Burow's wet compresses are usually effective, with 3 per cent ammoniated mercury ointment or 5 per cent Scarlet Red ointment applied at night.

Ambulatory patients are usually best treated by the use of Unna's zinc-lime gelatin boots, applied from the toes to just below the knee with alternating layers of Unna's melted gelatin and gauze, renewed every two weeks until healing occurs. At times it is possible to make use of the same principle through the use of woven elastic-type bandages applied before getting out of bed each morning and removed after getting into bed each night. Under the bandage it is well to apply daily 3 per cent ichthyol in zinc oxide ointment or 5 per cent Scarlet Red ointment until healing occurs. A small gauze dressing over the ointment keeps it from soiling the bandage.

The average patient should be advised to observe the following rules:

1. Do not scratch.
2. Do not apply soap and water to affected areas.
3. Elevate legs whenever possible.
4. Cleanse legs daily with olive oil or cottonseed oil.
5. Stay off feet as much as possible.
6. Protect legs from trauma.

Recurrence is the rule unless the circulation in the part has been restored to near normal. Varicose veins should be treated by injection or other surgical procedure. Continued support with bandages may be required.

INSURANCE MEDICINE

H. F. Starr, M.D., *Editor*, Greensboro, N. C.

SOUTHERN MORTALITY

Life Insurance Companies whose business covers the entire United States have found that the mortality in the Southern States is considerably higher than in the rest of the country. The Home Offices of these companies are located outside the

South and it is interesting and somewhat amusing to a Southerner to note the explanations offered for this and to be reminded as to just how some highly intelligent people in the rest of the country look upon the South. It could be, of course, that we natives have become so accustomed to conditions that we regard them as normal, whereas in the eyes of outsiders they appear to be horrible examples of how man should not live.

One company made a mortality study of its business written in ten Southern States in 1930 which showed 23 per cent (American Men's Select Table) higher mortality during the first five years of the insurance and 17 per cent higher after the first five years than that for the company's total business, inclusive of the South.

In 1938 this company found that 22 per cent of its business was in eleven Southern States. Another study was made in 1938 of Southern mortality, including the following States: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Oklahoma, Tennessee and Texas. In Arkansas and Tennessee business was not written in the river counties. Tennessee was the only state not included in the 1930 study. The experience of this company was presented at a meeting of the Medical Section of the American Life Convention. An interesting discussion followed and some of the facts and ideas brought out will be mentioned in this article.

The 1938 study was based on policies issued at standard rates in the years 1920-1935, exposed from 1920-1936. The Southern business during the first five years had a 19 per cent higher mortality based on the American Men's Table than the company's entire business. After five years it was 11 per cent higher. The apparent decrease in excess mortality since the 1930 study was not real, since the Southern mortality was no lower, but the mortality for the company as a whole was higher during this period.

The death rate from influenza was high but low from pneumonia in every State. This was attributed to the low altitude and it was stated that patients in the South past age 60 are less apt to contract pneumonia than in the North. It was noted, however, that the combined mortality from influenza and pneumonia was about the same as the general mortality.

Anemia shows a high mortality in Arkansas and Georgia, due, it was suggested, to malaria and hookworm in the population.

Malaria, it was stated, is responsible for a high death rate from tuberculosis of the lungs in Arkansas and Louisiana. The high mortality from cerebral hemorrhage in Arkansas, Louisiana and Tennessee was taken as an indication that an anti-syphilitic campaign is in order.

Mortality from angina pectoris and coronary disease was 50 per cent higher in the South. This was unexpected and brought forth comment, in view of the leisurely life led in the South.

Disease of the digestive organs gave a high mortality in the South due, it was charged, to improper diet.

External causes, excluding homicide and suicide, were 70 per cent higher in the South due mainly to automobile accidents. This figure is distorted somewhat by a few large and unusual claims in one State.

It seems to be the general impression among many that the high Southern mortality is due to a variety of causes including malaria, often undiagnosed; quinine and whiskey; and fast automobile driving. The death rate from homicide is high due, as one gentleman stated he had been told, to the frequency with which Southern gentlemen carried firearms, ostensibly as a protection against the colored population. This, together with free use of alcohol, it was said, would naturally encourage a higher homicide rate. It has been stated that Medical Directors with wide experience with this business "down South" find that a more lenient view is taken of the use of alcohol in the South than in the North, particularly where it affects very prominent and highly respected citizens. Another cause ascribed for high Southern mortality is syphilis, the rate of which is said to be high in the South on account of the large colored population which is a source of infection. Is this to be a result of the present-day reformer's attempt to eliminate all social barriers between the races?

The death rate from cirrhosis of the liver in the South is about the same as in the North. This could not be explained, for a lazy, syphilitic population, steeped in alcohol and eating hot biscuits and other trash not fit for human consumption should, according to all counts, show a high incidence of cirrhosis of the liver. There was another unexpected result. In a population living under crude sanitary conditions on an improper diet, one would expect high death rates from typhoid and nutritional diseases, but the death rates for these diseases are actually below the normal. It was mentioned, however, that the influence of these diseases is likely widespread, and by breaking down resistance favor "more severe and fatal conditions." It will be a new thought to many that an attack of typhoid exerts its unfavorable influence on mortality by breaking down resistance to more severe and fatal conditions. We may well ask—What more severe and fatal conditions? We have always labored under the impression that typhoid itself qualified pretty well as a severe and fatal condition.

The Southern medical examiner, of course, comes in for his share of criticism for the high mortality. The outlook for the future is said to be encouraging, for the quality of medical colleges in this section is improving. Evidently it was not realized that a very large percentage of Southern physicians were educated in medical colleges outside of the South. For the sake of curiosity we have checked the 101 physicians in a representative Southern town and find that only 13 received their medical education in the 11 Southern States covered in the mortality study and 88 were educated in other States, mostly in the North. Since one-third of the excess Southern mortality is due to external causes, other than suicide or homicide, it does not seem proper to charge any considerable part of the extra mortality to Southern medical examiners.

We had thought that the practice of setting the South apart from the rest of the country had about died out with the previous generation. Unfortunately, that is not the case, and we are somewhat astonished to see the South as it appears through the cold, impartial eyes of the rest of the country. A Southerner's first reaction to comments similar to those mentioned above is similar to that attributed to Joe Brown when he saw for the first time a movie showing a close-up of his enormous mouth. It is said that he jumped up and cried "It's a damn lie!" But criticism serves a useful purpose. It prods us into reëxamination of our situation which is a good thing, as everyone knows we have much which requires improvement and correction.

In view of the excessive mortality experienced in the South by companies located outside the South, how, one may ask, can companies located and operating solely in the South manage to keep their mortality down? The companies confining their operations to the South not only experience as favorable a mortality as those operating over the entire country, but many experience a lower average mortality over a period of years. This is brought out by the following table which shows the average 5-year mortality (1935-1940) for the 18 largest Southern companies operating solely in the South compared with that of the 18 largest companies operating over the entire United States:

MORTALITY EXPERIENCE

Companies Operating Exclusively in South Company No.	*Five-year Average Mortality* %
1	53
2	65
3	53
4	61
5	58
6	64
7	50
8	42
9	54
10	43
11	46
12	54
13	40
14	41
15	58
16	60
17	28
18	33
Total Average	57

18 Largest Companies Operating over entire U. S. Company No.	*Five-Year Average Mortality* %
1	46
2	56
3	60
4	56
5	64
6	53
7	68
8	55
9	63
10	56
11	59
12	56
13	56
14	53
15	53
16	63
17	57
18	46
Total Average	50

What is the reason for this? A score of persons if asked this question would probably give a score of different answers. Could it be summed up by saying that Southerners are a peculiar lot and only a Southerner can fully understand them?

CONGENITAL DISLOCATION OF THE HIP

(F. C. Goodwin & D. M. Cameron, El Paso, in *Southwestern Med.*, April)

The mother usually gives the first clue, noticing that one or both legs are held in external rotation, or that one leg is used more freely than the other, or that there is a shortening of one leg. The affected member shows an increased number of skin folds on the inner side of the thigh, which is held in external rotation. The inguinal and gluteal creases are deepened on the affected side and the gluteal muscles are atrophied. The greater trochanter is more prominent; the affected leg appears shorter.

Nordics and Negroes are relatively immune, Spanish-American very liable. Of 727 admissions to a hospital for crippled children 3.5 per cent had a congenital dislocation of the hip. The incidence is 9.1 per 100,000 Spanish-American population; our figure for Anglo population, 1.7.

The Diagnosis of Recurrent Goiter With Hyperthyroidism
(From page 568)

position with the end up toward the gallbladder may give similar symptoms in case of suppurative appendicitis. In fact, pancreatitis may follow such a condition.

It should be remembered that pancreatitis occurs frequently, and a recognition of this condition and proper treatment are important.

SURGERY

Geo. H. Bunch, M. D., *Editor,* Columbia, S. C.

RECTAL HERNIA

Non-traumatic hernia of the abdomen practically always develops through or about some normal opening for the passage of viscera or large blood vessels. Through the rectal outlet in adults the condition is extremely rare and results from inadequate perineal support given by pelvic fascia and levator-ani muscles that are congenitally weak. It should not be confused in women with rectocele, pouching of the anterior rectal wall into the vagina, which follows perineal lacerations and childbirth, nor with vaginal hernia in which the mass protruding into the vagina is small intestine and which is of developmental origin. In the latter the intestine is contained in a peritoneal sac but rectocele develops below the peritoneal reflexion and has no sac. Because they both protrude into the vagina above the sphincter muscle their operative cure, whether occurring singly or together, is a gynecologic problem.

In true rectal hernia, or prolapse, the protrusion comes through the sphincter muscle and through the anus. It is not uncommon in infancy and appears as a congested bleeding conical mass which may extend several inches from the anus. After gentle reduction of the mass with a well lubricated gloved finger, to prevent recurrence, the buttocks of the child, except for defecation, should be kept strapped together with adhesive. With mineral oil given daily straining is reduced to a minimum. After several weeks of bed rest and conservative treatment most children are cured by fibriosis of the rectal wall and by the formation of supportive adhesions.

Prolapse of the rectum in adults usually occurs in men and is a much more serious condition. Beginning as an evertion of the mucosa it becomes in effect a sliding hernia of the rectum through the anus. It is progressive and if unrelieved may reach mammoth proportions. Not being attached to the sacrum the anterior rectal wall slides downward more readily than does the posterior so that the mass protruding is longer and larger anteriorly. In massive prolapse the peritoneal reflexion from rectal traction also slides downward and in this way permits the entrance of small intestine into the protuding mass.

In early cases maintainance of continuous reduction of the mass after deep cauterization of the rectal mucosa in longitudinal lines to cause scarring may result in cure.

Advanced cases, however, can be cured only by major surgical operation to provide perineal support and to restore normal rectal obliquity. Graham (*Annals of Surgery,* June, 1942) through midline laparotomy forces the rectum back into the hollow of the sacrum by suturing the levator ani muscles with the fascia together anteriorly. Cohn (*Am. J. of Surg.,* Sept., 1942 , after resection of the excess bowel and end to end anastomosis sutures the levator muscles together to give perineal support. In both procedures the ureters should be identified and protected from injury by having catheters passed before operation.

CARDIOLOGY

C. M. Gilmore, M.D., *Editor,* Greensboro, N. C.

THE CAUSES AND PREVENTION OF SUDDEN DEATH IN CORONARY DISEASE

Minimizing the occurrence of fatal complications of myocardial infarction resulting from coronary occlusion requires a careful analysis of the immediate cause of death following the occurrence and during the recovery stage of the infarction. Acute myocardial infarction may occur in the course of coronary arteriosclerosis as a result of either hemorrhage in a coronary vessel producing closure, rupture of a subintimal lipoid abscess with plugging of the lumen; or infarction occurring without complete organic occlusion of a coronary vessel.

The signal importance of prompt recognition is emphasized in a timely article[1] and following recognition, first consideration should be relief of pain. For this is now being used intravenous injections of papaverine, followed by morphine when necessary, which not only relieves the pain, but appears to have a tendency to minimize shock, and may serve to limit coronary vasoconstrictor reflexes. The use of atropine for the attenuation of vagus vasoconstriction may also be a sound measure, even when there is no more than a well founded suspicion of occlusion or infarction.

The same regional avsoconstriction which in purely anginal attacks of coronary atherosclerosis constriction of the regional arterioles is found to be transient and to respond to nitrites or to alcohol, appears to take place in sudden permanent occlusion, effective control of which may have effect on the size and immediate outcome of the impending infarction. Generalized coronary vasoconstriction has been found subsequent to myocardial infarction and this seems to be the factor causing ventricular fibrillation. The successful use of quinidine in the prevention of sudden death in degenerative heart disease advocates its prophy-

1. O. P. J. Falk, in *Jour. A. M. A.,* Aug. 15th.

lactic use after the onset of myocardial infarction to prevent ventricular tachycardia and fibrillation.

Another immediate cause of death which occurs in acute coronary occlusion with myocardial infarction is massive pulmonary embolism, which apparently does not come from mural thrombosis in the heart but from thrombosis originating in the iliac veins, circumstances appearing favorable for the formation of thrombosis as a result of lowered blood pressure and the prolonged period of bed rest. On the fourth or fifty day slight exercise to prevent venous stasis may be instituted, beginning with eight or ten deep breaths, depending on the condition of the patient, with the legs being passively flexed by an attendant.

Another cause of death within the immediate recovery period following acute myocardial infarction is myocardial failure, associated with severe pulmonary edema, and occasionally with acute hepatic congestion. For management of this complication are used digitalis, adequate oxygen therapy, and parenteral aminophyllin, the last as a routine measure being a debatable question.

The reduction of blood pressure occurring during surgical anesthesia and early postoperative periods gives an ideal situation for an already impaired coronary vessel to develop complete occlusion, and is in such cases sometimes the cause of sudden death. When surgery is absolutely necessary, careful preoperative study of coronary efficiency, an estimate of myocardial and coronary reserve, proper choice of anesthetic, as well as careful observation and management during anesthesia and immediate postoperative period, and reduction of time of surgical procedure to a minimum, should all serve to reduce danger of fatality.

DIAGNOSIS AND TREATMENT OF CARDIAC EMERGENCIES

THERE IS NO TIME to read up when called to deal with a cardiac emergency. Here is the substance of a good advance read-up.[1]

When called in such an emergency, first determine the very earliest symptom and whether there was pain (location and duration), palpitation, prostration, syncope, or dyspnea. Next, differentiate between peripheral circulatory failure and a true heart attack. Eschew the routine use of morphine or sodium amytal.

In angina pectoris there is a burning, constricting sensation under the upper half of the sternum, rarely to the side, pain down the left arm with the sufferer absolutely quiet. Pain is increased by effort and it terminates within 15 minutes. The patient is usually of middle- or past middle-age, of ashen color and presents an expression of fear. During the attack the blood pressure is elevated; the electrocardiogram and auscultation of the heart seldom disclose anything helpful. The treatment is 1/100 gr. nitroglycerin hypodermic tablet dissolved under the tongue, or inhalation of amyl nitrite. Morphine should not be given. A drink of whiskey or brandy may stop an attack. Nitroglycerin 1/100 gr. may serve as a prophylactic against an attack of angina when taken in anticipation of exertion.

Acute coronary occlusion usually occurs while at rest, with agonizing, crushing or squeezing sensation, lasting often six to 12 hours. Pain is behind the sternum, across the chest between the nipples, or in the epigastrium, and may radiate into the neck and down the arms. The middle- or past middle-age patient has an ashen color, a falling blood pressure, is in profuse perspiration, apt to vomit and have abdominal distention with much epigastric pain. A pericardial friction rub may be heard; the tones may be distant; new murmurs may be present. The earliest special examinations of diagnostic value are sedimentation rate (elevated), leukocyte count and electrocardiogram. Characteristic changes in the QRS and T pattern are seen. The ecg. is generally positive within the first 24 hours, often immediately; but at times many days elapse before a diagnostic pattern occurs.

Morphine sulphate, ¼ to ½ gr. should be given at once and repeated if necessary, oxygen given and the patient kept at absolute bed rest. If arrhythmia develops, use quinidine sulfate, 3 to 6 grains every five hours; if cardiac decompensation occurs, digitalize; if the patient suddenly becomes pulseless and unconscious (with ventricular tachycardia proved absent through auscultation of the heart) give 0.5 to 1.0 c.c. adrenalin 1/1000 subcutaneously. *Nitroglycerine in this condition may cause sudden death.* If ventricular tachycardia develops (a forerunner of ventricular fibrillation and death), give quinidine dihydrochloride, 7.5 gr. intramuscularly every few hours. A minimum of eight weeks complete bed rest should be ordered.

Other cardiovascular conditions which give rise to pain in the anterior thorax are:

Paroxysmal tachycardia with "status anginosus," in which the tachycardia makes the diagnosis, treatment and relief simple though use of quinidine sulfate in dosage as previously stated.

Dissecting aortic aneurysm, which is usually fatal, manifested by hypertension, severe prostration, agonizing pain especially in the back. Morphine is indicated for pain.

Acute pericarditis is characterized by pericardial friction rub, fever, leukocytosis, electrocardiographic changes, distant heart sounds when effusion occurs, x-ray findings, dyspnea and some pulsus paradoxus. Morphine ¼ to ½ gr. q. 4 h.

1. R. E. Lyons, Bloomington, in *Ill. Ind. State Med. Assn., Sct.*

hours, salicylates, ice cap to the precordium, oxygen and chemotherapy. Pericardial tap should not be done unless serious compression of the heart can be proved.

Chest pains often confused with those cardiac in origin are those of neurocirculatory asthenia—pain of the cardiac apex with tender skin over the apex region; those of diaphragmatic hernia, arthritis of the spine, cholelithiasis, pleurisy, herpes zoster, anxiety neurosis with pain invariably to the left of the parasternal line, acute pyelitis and acute hemorrhage from peptic ulcer. Also, the pain of pulmonary embolism, other symptoms of which are sudden circulatory collapse, dyspnea, thready rapid pulse and cyanosis. The chest pain here is rarer than with coronary thrombosis although it may be entirely absent in each. Hemoptysis does not differentiate because it does not occur early in pulmonary embolism. Distention of the great vessels of the neck is more likely in pulmonary embolism. Accentuation of the pulmonic second sound is often heard, also a systolic murmur may be recognized in this area. The electrocardiogram may be helpful.

There are five conditions of which palpitation is the most conspicuous feature which constitute emergencies.

Paroxysmal auricular tachycardia begins and ends in one beat rate per minute, 150 to 250, and is perfectly regular. Treatment and prevention is by quinidine sulfate. Pressure over the eye balls, on the carotid sinus, or in the epigastrium, rapid swallowing or vomiting may stop the attack.

Auricular flutter is occasionally paroxysmal, but tends to persist once it starts. When seen untreated the rhythm is regular; ventricular rate is often 170, the auricular 340 due to a 2 to 1 AV block. Therapy: digitalis and quinidine sulfate.

In paroxysmal auricular fibrillation the heart action is rapid, completely irregular, with pulse deficit and a difference in the number of beats heard at the apex and base. Quinidine if paroxysmal attack is demonstrated; if chronic, employ digitalis and do not use quinidine because of danger of expelling emboli by change of the fibrillation into a contraction which may squeeze out emboli.

Paroxysmal ventricular tachycardia denotes serious structural heart disease. The rhythm is not absolutely regular; there is a variation in the intensity of the first heart sound which may be reduplicated, muffled, or accentuated; in the jugular pulse there are fewer auricular waves observed than ventricular beats heard over the precordium; carotid sinus pressure does not affect it. The onset is usually sudden and the rate is 150 to 200 per minute. Treatment: quinidine sulfate.

Premature contractions may be corrected by quinidine is any medication is necessary. Digitalis may make them more frequent.

Palpitation may be purely neurogenic.

Three types of dyspnea are described and differentiated.

Paroxysmal dyspnea, also called cardiac asthma and pulmonary edema is common, requiring immediate treatment. The cause is left ventricular failure. Give morphine ¼ to 1/3 gr. with atropine sulfate 1/150 gr., oxygen, aminophylline 3¾ gr., digitalize. When present for a long time it may not respond well to morphine. The editor has great faith in the efficacy of bleeding—a half to one pint.

For the rhythmical apnea and hyperpnea of Cheyne-Stokes breathing oxygen is helpful almost immediately; aminophylline 3¾ gr. given intravenously is almost specific; chloral hydrate 15 to 30 gr. per rectum is also useful.

The dyspnea of congestive heart failure demands immediate digitalization and oxygen. Powerful diuretics before digitalization are dangerous.

Cardiovascular syncope of three kinds gets us out of bed.

The Adams-Stokes syndrome consists of sudden, painless unconscious spells, with or without convulsions due to a sudden failure of the ventricles to contract. Ephedrine sulfate ⅜ gr. t. i. d. by mouth, and subcutaneous administration of adrenalin 0.3 to 0.5 c.c. 1/1000 every 3 or 4 hours if need.

Ventricular fibrillation will cause sudden syncope and often is the aftermath of ventricular tachycardia.

Carotid sinus syncope, resulting from carotid sinus irritability, may explain sudden death during anesthesia, from the anesthetist accidentally pressing on this sinus in trying to palpate the carotid pulse the attack may be brought on in sensitive subjects by suddenly turning the head, or in maintaining certain positions of the head. In this state the blood pressure falls and the heart rate fails. Ephedrine sulfate 20 to 30 mg. two to four times daily may prevent the attacks.

GENERAL PRACTICE

James L. Hamner, M.D., *Editor*, Mannboro, Va.

CARDIOLOGY IN GENERAL PRACTICE

The common forms of heart disease—rheumatic, thyroid, syphilitic, hypertensive disease of the coronary arteries and pericarditis—the practitioner sees first and often enough to become very efficient in their diagnosis and management. He

1. G. M. Cook, Hammond, in *Ill. Int. State Med. Assn.*, Sept,

sees many of them in the earlier stages. The diagnosis then is more difficult but the chances of improvement are much greater.

So is introduced an excellent discussion[1] of the cardiology of general practice. Attention is called to those cases of rheumatic fever of insidious beginning, without joint pains, which when understood by the physician an dexplained to the family, may be controlled by long-enforced bed rest. Thyrotoxicosis, when masked as heart disease, offers the opportunity for a dramatic cure. To the practitioner, in most communities, whether or not he does obstetrics, falls the duty of managing and advising cardiac cases complicated by pregnancy. When referring surgical cases, the practitioner makes appraisal of the patient's general condition; he is more competent than the surgeon to do this.

A great number of patients come to the practitioner with imaginary heart disease. Positive and accurate decisions of these problems send many patients home well or lead to proper treatment and many cures. It is a greater sin, the essayist well says, to make a crippled cardiac out of a well man than to make a mistaken diagnosis of a sick one.

Atherosclerosis of the coronary arteries with its multiple and complex pathology causes a large proportion of serious cases in the practice of general medicine. It is in the diseases of the coronary arteries that the electrocardiogram has its greatest value. It is not represented to be difficult to learn to read the majority of the tracings and, with a good history and the clinical findings before one it is far easier and safer to make the interpretations.

It is recognized that the treatment of heart disease is not dramatic, or often rewarded with complete cure, but it is in the province of the family physician to advise the patient and his family that in most cases very much can be done about it when the problem is set clearly before the patient and his family, which brings comfort to the patient, satisfaction to the family, and respect to the physician.

The question often arises in every practitioner's mind as to when he shall find time to take these careful histories and make these examinations. This is answered in part by another question. Just how does the practitioner wish to spend his time? He develops medical acumen only by careful and detailed work, and time is part of the price.

Excellent postgraduate courses are offered, which, if taken seriously and followed up at home by intensive reading and careful and patient work over a period of time, will develop an efficient working knowledge of diagnosis and management in heart disease. The refinement of the art of history-taking and the development of the special senses cost only time and patience. As a rule expensive laboratory examinations are unnecessary.

THERAPEUTICS

J. F. Nash, M. D., *Editor*, Saint Pauls, N. C.

TREATMENT OF RHEUMATOID ARTHRITIS

Articles dealing with chronic arthritis are mostly either too pessimistic, too optimistic or too vague. Freyberg's dealing,[1] based on large and well-controlled experience, is encouraging and definite. It is carefully abstracted as conveying information which is usable and which promises good results in the vast majority of cases.

In the treatment of no disease has there been so much exploitation of remedies as in that of chronic arthritis. Rheumatoid arthritis, the most common form of chronic arthritis, is a proliferative inflammation primarily of synovial tissue which causes destructive changes of articular cartilage and subchondral bone so that crippling often results. Most commonly it begins in early life and its features are chronic inflammation of the capsules of many joints; frequently mild fever, leukocytosis, anemia, increased speed of erythrocyte sedimentation, anorexia, weight loss, skin and muscle atrophy, weakness and ease of fatigue. The disease usually is slowly progressive with periods of remission and relapse.

Often physicians are so enthusiastic for some special therapeutic agent that they neglect the general health, and to make the patient comfortable and to prevent dysfunction and deformities of joints.

The patient with rheumatoid arthritis needs a great deal of rest. General physical and mental rest and rest for the involved joints is required—in severe cases 24 hours a day in bed, oftentimes for many months.

Physical therapy is of proven value in most cases. Heat and hydrotherapy constitute the fundamentals. Fancy measures of physiotherapy have little or no value in excess of the simple inexpensive forms used daily or twice daily, which so often means effective therapy which can be carried out by the patient in his home. Heat from bakers, infrared lamps, warm pad or compresses, soaks and contrast baths, paraffin baths, full body baths are all useful. The introduction through the skin about affected joints of vasodilating drugs by means of galvanic current has recently become popular. A critical study of this form of therapy for rheumatoid arthritis leads to the conclusion that it offers no important advantages over simpler methods.

1. R. H. Freyberg, Ann Arbor, in *Ohio State Med. Jl.*, Sept.

Even though rest is emphasized, daily systematic exercises to put the affected joints through a full range of motion are important to inhibit the growth of proliferative inflammatory tissue and to prevent stiffness and muscle atrophy. These exercises should not be strenuous, and during more active stages of the disease should be non-weight-bearing.

Splints, molds, removable casts, and other means of preventing deformities are extremely important. I know of no "arthritic diet" that has any proven merit. A general diet adequate in all essentials, high-caloric diets for the undernourished, reduction diets for the obese, with moderate supplements of vitamins.

Maximum comfort should be obtained with wise use of analgesics. Acetyl-salicylic acid and its derivatives are usually most effective. Usually 0.64 gram taken on awakening and at three- or four-hour intervals during the day as needed during the night afford a high degree of comfort.

Anemia should be treated with iron and ample protein intake; oftentimes, however, cure of the anemia is not possible. Transfusions of whole blood weekly for three or four weeks sometimes are of value to patients chronically ill and with debilitating anemia. Occasionally in the more sick, debilitated and difficult cases transfusion initiates improvement which can then be kept up by other treatment. The expense of transfusions does not justify their frequent use in many patients.

The removal of foci of infection after the disease has become established has generally failed to cure the arthritis. One who sees the many unhappy chronic arthritics who have had all their teeth removed, tonsils out, sinuses punctured; allgladder, appendix and pelvic organs removed, and whose arthritis romps merrily on, becomes conservative as to removal of foci of infection. Definite focal infection in the threumatoid arthritic should be managed *as it would be in a non-arthritic*, not for curing the arthritis. The removal of teeth, tonsils and other non-vital parts on suspicion or just because they are present should not be done.

Vaccines for treatment, especially of streptococcal infections, have been in general unsuccessful. Sulfanilamide and related drugs prepared to date have been quite devoid of value in the treatment of this disease. Fever therapy and foreign-protein shock improvement is only temporary.

Röntgen irradition of rheumatoid arthritis of extremity joints gives unreliable results. For rheumatoid arthritis of the spine, results were excellent in early stages of the disease; sometimes complete disappearance of all clinical evidences. Even in later stages after calcification of spinal ligaments a high percentage had significant relief of pain. Experience of careful investigators shows that neither thiamin chloride nor ascorbic acid, even in large doses, given orally and parenterally, is of value in arthritis. With Vitamin D our results have been discouraging.

No direct benefit to the arthritis has come from administration of thyroid or pituitary preparations. Estrogenic hormone in adequate amounts during menopause often relieves rheumatic menopause symptoms.

No benefit has been realized from sulfur medication.

Colloidal gold preparations cause far less reactions than other gold salts, but are of little or no value. The soluble crystalline salts, myochrysine and gold sodium thiosulfate, are readily absorbed. Although gold sodium thiosulfate can be given intravenously, careful studies show no advantage in so doing and because of distinct disadvantages of this route of administration, if this salt is used, intramuscular injection is advised.

Different preparations must be considered in equivalent gold doses. Toxicity usually does not occur until the patient has had several hundred milligrams of the drug, sometimes after a course of therapy. Gold is slowly eliminated and the length of time it circulates after treatment increases with larger weekly doses. We do not know at present how to inhibit toxic reaction. Treat with as small amounts of gold as can be therapeutically effective.

If myochrysine is used we suggest weekly injections not to exceed 50 mg. of the drug (25 mg. of gold) continued if tolerated until 700 to 1000 mg. of the drug is used. With gold sodium thiosulfate so similar in its metabolic and clinical effects to myochrysine, dosage of the preparation which is 37 per cent gold, amounts of the salt should not exceed 65 mg. weekly.

Properly and patiently treated, the person with rheumatoid arthritis has a much better prognosis than most patients and physicians have thought.

MANAGEMENT OF CORONARY DISEASE

We need to be kept reminded of the best means of managing our patients who have disease of their coronary arteries.

A helpful, authoritative article[1] from the Mayo Clinic serves the purpose admirably.

Patients with coronary disease are divided into (1) those who have mild retrosternal pain brought on by severe exertion (mild coronary sclerosis and angina pectoris); (2) those who have severe substernal pain induced by mild exercise (severe coronary sclerosis and angina pectoris); (3) those with acute coronary thrombosis and myocardial infarction.

1. H. L. Smith in *Proc. Staff Meeting Mayo Clinic*, May 20th,

The treatment in the first group is instructing the patient to work less strenuously and under less nervous strain, to obtain 10-11 hours' sleep a night, take a long rest after the noon meal. He should never eat a large meal, never become excited or angry, and should rest 30 minutes to an hour after eating. If overweight he should reduce. Few patients in this group need medication.

Patients with severe coronary disease and angina pectoris are advised to follow a much more rigid program. They receive nitroglycerin for their attacks of pain. It is advisable to give some in this group 1½ grains aminophylline t. i. d. If they are nervous and do not sleep, small doses of phenobarbital or seconal. Often it becomes necessary to put to bed for 10 days to two weeks, with instructions how to rest and interesting books with book rest. A radio usually serves a good purpose. Reduce their work, change their vocation or discontinue work entirely. In many of this group acute coronary thrombosis will later develop.

For patients with acute coronary occlusion time in bed depends on the severity of the attack. A patient with a mild degree of acute coronary occlusion, without a decrease in blood pressure, high leukocyte count or high sedimentation rate and without evidence of shock, after two or three weeks in bed allow up in chair for another two or three weeks. Patients usually are not allowed to walk for four or five weeks. Those with severe coronary disease and massive infarction are in bed for longer periods.

Rarely are old people kept in bed for long periods. Recently two old patients in the hospital with acute coronary disease, one rather severe the other moderate, were allowed out of bed after a week, not allowed to walk but in a chair; and they got on as well as those kept in bed four or five weeks.

Most such patients should be kept in bed, or sitting, for five or six weeks. Rarely do patients with acute coronary occlusion return to work within less than three months; sometimes six months or a year. The pain is controlled by morphine, ¼ to ½ gr., supplemented with large doses of whiskey. Oxygen is usually given for pain, dyspnea, cyanosis and restlessness, in a tent or by means of a mask; for sleep and relaxation seconal or phenobarbital, often small doses of sedative agents for days or weeks. A hypertonic solution of glucose is effective in controlling dyspnea, and Chenye-Stokes breathing. A patient who has sat in a chair for two or three weeks at night is given 200-300 c.c. of a hypertonic solution of glucose with 3¾ grains aminophylline, intravenously, frequently is able to sleep the ensuing night flat in bed. Give quinidine if a flutter or an extrasystolic arrhythmia develops, 3 or 4 grains, 3 or 4 times a day. Quinidine is employed to prevent ventricular fibrillation. Patients in whom gallop rhythm or a weak and thready pulse develops receive digitalis, not in massive doses.

Any patient who objects to using the bedpan is allowed to use the commode. With the aid of skilled nurses and an orderly, a commode can be used with less exertion than would be required in the use of a bedpan. No ill effects have resulted from the use of the commode, but patients have died while using the bedpan.

Warning is given that a person who has severe acute coronary occlusion with massive myocardial infarction is critically ill and may die at any time; but with proper management and treatment many such patients recover and are able to return to work and lead a fairly normal existence for a number of years.

DENTISTRY

J. H. Guion, D.D.S., *Editor*, Charlotte, N. C.

FRACTURES OF THE JAWS: SHOULD TEETH AND COMMINUTED BONE BE REMOVED?

The vast experience of the British army in the field of dental surgery has cleared up a good many most interesting points. A valuable article is abstracted.[1]

While the majority of dental surgeons favour removing teeth in the line of fracture, most of them hold that badly comminuted bone should be conserved because its removal often leads to the necessity for bone-grafting. Is the assumption that there is such a wide difference between teeth and comminuted bone justified and, when bone dies in the mandible, are the results so much less detrimental than those of dead teeth?

There is a stronger case for preserving the front teeth in a young girl than in an elderly patient. In children and young adults the wishes of the patient cannot be entirely disregarded. When other injuries occur in conjunction with jaw fractures, surgical dental treatment may have to be postponed or curtailed: the most serious injury must naturally be treated first, but one of the simpler forms of immobilization can generally be carried out. At advanced dressing stations, for instance, it is impossible to give more than first aid, and a suitable form of treatment can only be planned and carried out when the patient reaches the base hospital. While extractions that appear inevitable should be done as soon as possible, no tooth, un-

1. D. Greer Walker, M. Dent. Sc., M.B., *in Proc. Royal Soc. of Med.*, Aug.

less it is so loose that it can very easily be removed, should be extracted unless some stable form of fixation can be applied.

Carious and infected teeth that are not directly involved in the line of fracture should be retained as they may be an invaluable aid in splinting the jaw. Unless some decalcification has occurred the exact extent of some of these fractures may not be apparent, and a routine follow-up of radiograms should be carried out in all cases. Control of the posterior fragment should not be allowed to influence the decision in favour of retaining this tooth if extractiton is the better course on principle.

Teeth subjected to injury may have either their roots or their crowns fractured. Fracture of the crown of the tooth opens the pulp cavity to infections; crowns knocked off also cause a slight subperiosteal fracture. These should heal quickly enough to become sealed-off before any infection can extend from the pulp canal. The roots, if they are left, can be removed after about three weeks when the fracture is partially united.

It is important to decide whether infections are connected with the line of fracture or separated from it by chronic inflammatory tissue. It would be a mistake to leave teeth if infection has direct access to the fracture; but this occurs only when the fragments are displaced, thus causing rupture of the inflammatory tissue. In subperiosteal fractures a better result is likely to be obtained by postponing extraction until the fracture is sealed-off.

A conservative line of treatment is indicated in fractures involving developing and unerupted teeth. The former may be regarded as free from infection and unlikely to cause trouble: the latter may be retained at some risk but this is more than counterbalanced by the trauma that would result in removing them.

In extensive alvelor fractures there are usually indications for extraction, particularly when they are associated with infection; but the teeth may safely be retained in cases that are not of a serious nature. If large portions of the alveolus are fractured only those whose extraction is clearly demanded should be removed until some union has taken place.

It is sometimes difficult in the less severe cases to determine whether fractures of the mandible are simple or compound. In certain fissure or stellate fractures there is no rupture of the soft tissues and no communication with the mouth; and these might therefore be more correctly classed as simple or subperiosteal fractures. The simple ones respond to conservative methods while the period of treatment in those associated with loss of bone may be considerably shortened by radical débridement.

The value of radiograms in the treatment of fractures is not limited to showing the extent of the trauma: they are essential also on account of the subsequent changes they may indicate, and of these the most important is that of infection. Due attention should be paid to abnormal decalcification even in the absence of corroborative clinical findings.

Delayed union is caused either by inadequate immobilization or some persistent form of infection. This type of case usually responds within a reasonable time to immobilization followed by extraction of adjacent teeth and opening of the infective cavity into the mouth.

In treating a case immediately after the injury the problem might be described as purely traumatic. After a short interval infection begins to play a major part and due respect must be accorded to it.

PEDIATRICS

Edwin L. Kendig, Jr., M.D., *Editor*, Richmond, Va.

DIFFERENTIAL DIAGNOSIS OF MENINGEAL IRRITATIONS

Any bacterium that could cause a disease in the human system could cause meningeal irritation. Epidemic meningitis is not the most common type of meningeal irritatiton; over half are due to tuberculosis; only one-fourth to epidemic meningitis. Toxins may cause meningitis; or it may be due to virus diseases, products of heavy metals, mechanical vessel obstruction or to cetrain metabolic condititon; there are pseudomeningeal irritations as well. Equine encephalomeningitis is on the increase.[1]

Thus opens an instructive article, which is abstracted at length.

Meningeal irritatitons may be caused by thrombosis of vessels, edema, tumor, an inflammatory process in one of the bones of the skull with a secondary extension.

Uremia commonly may be ushered in by convulsions. They may follow acute infection, sometimes two or three weeks after. In case of infected ears, especially after scarlet fever, one should not too hastily diagnose meningeal spread.

In meningitis there is always some acute or chronic disease elsewhere; the condititon in the meninges is secondary.

The differential diagnosis of meningitis rests upon the appearance of the patient, t., p. and r., history of illness; most important is the spinal fluid examination.

Epidemic meningitis may cause death early or

1. J. A. Toomey, Cleveland, O., in *Jl. Iowa State Med. Soc.*, Aug.

late, even within 12-24 hrs. after onset. Such cases are practically never diagnosed and the patients are usually moribund from the start. The ordinary patient with epidemic meningitis—half an oz. of pus drained off with the spinal fluid—is keenly alive to his surroundings. Patients with tuberculous meningitis become ill slowly and go on for perhaps 7-14 days before they have the slightest t. reaction, no pain or symptom other than lethargy. They lapse into a somnolent state, the t. starts to rise, and the end appears in sight. The patient with a mixed infection or a pyogenic infection of any kind, except epidemic meningitis, lies almost moribund. T. sometimes rises to 110 just before death.

In epidemic meningitis a child may start to get sick at four, by eight the t. be 104 or 105; in encephalitis, probably not over 101.

The p. is often slow and irregular in late tuberculosis. A period of apnea, followed by hypernea, is pathognomonic of a marked irritation at the base of the skull, tuberculous meningitis most commonly. The p. is fast in a case of pyogenic meningitis.

Epidemic meningitis of the ordinary type with proper therapy has very low mortality. Patients with meningitis of staphylococcus or streptococcus origin will die unless treatment is begun immediately. Of staphylococcus cases, no more than 10-20 per cent will be recovered from. In 1936 we had 13 cases of streptococcus and all but one died; in 1938 we had 12 such cases and not one died. We treated them with massive amounts of sulfanilamide.

In influenza meningitics an occasional patient may live; previously all died after any type of therapy. The mortality rate in tuberculous meningitis is still 100 per cent despite therapy. In syphitic meningitis the results depend upon the severity and duratiton of the infection.

A child with meningitis does not want to play for two or three days, lies around for two or three days more; no pain and no headache, hard to wake, does not want to eat. After 10 days to two weeks loses consciousness, t. and p. rate begin to rise. To this gradual in onset there may be exceptions. Adults may have headaches.

The onset in pyogenic meningitis is abrupt, with headache, vomiting, high fever etc. One of the first evidences is Kernig's sign. When we try to straighten the leg out as it is flexed over the abdomen, the other leg also flexes (Brudzinski sign). Placing the hand back of the neck and pulling the head forward both legs will flex. There may be stiff neck, bowed back and hyperactivity of the reflexes. The eyeground examination is worthless. The important thing to know is the chronologic order of those signs and they are permanent. In every case of pyogenic infection, including epidemic meningitis, once the meningeal signs occur they remain until the patient is better. The stiff neck may remain for as long as six months after an attack of epidemic meningitis, usually two weeks.

Reflexes in the morning and none in the afternoon in a patient with various neurologic reactitons is a tuberculous meningitis until proved otherwise. One pupil looking one way and the other another confirms the diagnosis.

Some with poliomyelitis and some with encephalitis have an irritation meningitis. Whenever there are upper motor neuron lesion signs, one should make this diagnosis, despite the signs of meningitis. In babies one cannot diagnose meningitis by objective examination.

There may be a tumor and if too much pressure is relieved the base of the brain be forced down into the foramen magnum. The color of the spinal fluid should be examined against both white and dark backgrounds to detect even the faintest xanthochromia. A patient may have been struck on the head some time before and the bleeding absorbed leaving some xanthochromia as the only clue to the type of meningitis or irritation. If the spinal fluid is opaque, if it is cloudy, faintly yellow, pmn. cells are present. If it is dead white, lymphocytes are probably present.

One must know if he is dealing with pmns. or lymphocytes. If the former we know at once that we have a pyogenic infection—with only two exceptions: equine encephalitis may give a pmn. reactiton at first; in tuberculous meningitis there may be a pmn. response which turns into a lymphocytic increase within 24-48 hours. A lymphocytic response means syphilitic or tuberculous, or some form of encephalitis or poliomyelitis, or deep-seated abscess. As the abscess grows and approximates the cortex the spinal fluid cells are more and more pmns.

The kind of organisms must be differentiated carefully. The quick decolorizing agents should not be used. The old-fashioned 95 per cent alcohol is advised.

A marked increase in protein in the spinal fluid means that the patient is seriously ill. On the other hand, an individual with perhaps 1000 cells and a one plus minus Pandy reaction is not very ill.

The sugar content is important from the standpoint of tuberculosis, but the sugar content of the spinal fluid should never be estimated without a simultaneous estimation of the blood sugar content as well.

TREATMENT OF THE EPILEPTIC CHILD

There is now more hope for the control of seizures and the achievement of a normal adult life than could ever before be offered the epileptic child. This is the key sentence of a very helpful article[1] which discusses a subject of great importance to every doctor, particularly those who undertake to see after the health of children.

Idiopathic epilepsy is largely a habit-spasm; *ergo,* we should do everything possible to prevent the development of the habit. With this fact in mind, no doctor can regard the first fit with indifference.

In undertaking the treatment of a child subject to recurrent convulsions, the first thoughts of the physician will be directed to the probable causes of the ominous and distressing symptoms. Seizures of any kind, whether major, minor or psychomotor, are symptoms of an underlying disorder of the nervous system, and in a fair proportion of the cases there is an anatomic, physiologic, pathologic or toxic basis which can be influenced for the better. When no physical cause can be found, in over 50 per cent a diagnosis of idiopathic epilepsy is in order. Studies made possible by the electro-encephalogram have helped greatly with the evaluation of therapeutic procedures.

The best results are obtained when therapy is effective early in the disorder before repeated major convulsions have irreparably damaged the brain. Parents must be shown the importance of regularity in the child's cycle of rest, work and play. *Seizures are more frequent when the mind and body are idle, so it is best for the youngster to be pleasantly occupied short of becoming fatigued.* In many cases regular school attendance can be continued; some children will require special handling or even placement in a school for retarded youngsters.

The author wisely says the objective should be training for a suitable and safe job in adult life. This objective is in many cases not sufficiently borne in mind.

The correction of physical abnormalities when possible; the removal of carious teeth, diseased tonsils and adenoids; the correction of endocrine disturbances; the elimination of allergic irritants, and the promotion of good physical development, good body mechanics, and a state of optimum nutrition—all are well worth while.

Phenobarbital is valuable in many cases of grand mal and may be used in combination with other therapy.

Toxic reactions, reported in 15 per cent of those taking *dilatin* under a physician's supervision, have been mild: vertigo, ataxia, apathy, gastric distress, nausea, dermatitis, usually in second week, gums, a painless hypertrophy.

The ketogenic diet is helpful in a few cases of grand mal in children and is particularly useful against petit mal.

Phenytoin (dilatin) sodium is an effective anticovulsant drug, especially useful in the control of grand mal and psychomotor epilepsy.

1. D. S. Polk, Rosemont, in *Penn. Med. Jl.,* Sept.

GENERAL PRACTICE

Walter J. Lackey, M.D. *Editor,* Fallston, N. C.

THE CLINICAL VALUE OF ELECTRO-CARDIOGRAPHY

Every doctor is concerned about heart disease and, since the electrocardiograph has come to be used so frequently in its diagnosis, would like to know what aid this instrument will afford.

Here is offered such information, much of it culled from a brochure by the Sanborn Company.

When newly introduced too much was expected of electrocardiography. The boundaries within which its value lies are fairly well defined, while the requisite skill in the interpretation of most electrocardiograms can be gained by any doctor who is willing to study the problem.

A difference in electrical potential is set up between the activated and resting parts of the cell, which can be detected by a sufficiently delicate galvanometer. When a great number of cells are involved, as in the heart as a whole, the record which is obtained is a summation of these electrical stresses registering in succession the phases of the cardiac cycle. It is obvious that only those conditions within the heart that produce electrical changes will be registered on the electrocardiogram and its usefulness is thus limited within these bounds.

The ecg. apparatus consists of a galvanometer of the string variety, or of the oscillographic type which depends on the amplification of the minute electrical current by vacuum tubes. The image of the string or of the galvanometer mirror is recorded on a moving photographic film or sensitized bromide paper. An interposed time marker permits the registration of time intervals of 0.04 and 0.20 seconds, and horizontal bands on the film allow the standardization of the record, so that a deflection of the beam of 1.0 cm. is equivalent to 1.0 millivolt.

The electrodes cannot be placed directly on the heart but satisfactory records can be obtained if they are attached to portions of the body so selected that the heart lies between them, the body thus acting as a passive conductor. In order to obtain the maximum recording of electrical changes occurring in different directions, three successive ar-

rangements of electrodes or leads are taken. Lead I is obtained by connecting electrodes placed on the right and left arms; Lead II connects the right arm and left leg; and Lead III the left arm and left leg. A triangle is thus obtained enclosing the heart in three directions. All three leads are always taken since any one may furnish valuable information not revealed by the others. Since Lead II roughly parallels the electrical axis of the normal heart, the deflections in this lead are usually of greater amplitude than in the others.

Because of their great value in the diagnosis of cardiac infarction, it is now the general practice to include a precordial lead (Lead IV), one electrode on the precordium, the other on a leg or arm.

The normal ecg. registers the successive phases of the cardiac cycle, and thus represents a sequence in time. Each deflection from the isoelectric base line signifies a change in electrical potential produced by the spread of the impulse of excitation or the contraction of the cardiac muscle. To these successive waves, the letters P, Q, R, S and T are applied.

The initial deflection, the P wave, is produced by the activation and contraction of the auricles. When this originates in the sino-auricular node, as it does normally, the P wave is upright (in Leads I and II at least), and of small amplitude and short duration. The speed of conduction between sino-auricular and auriculo-ventricular nodes is indicated by the P-R interval—between the beginning of the P wage and that of the QRS complex. When it is longer than 0.20 seconds, it means incomplete A-V block, which may increase to dropped beats, 2:1, 3:1, or complete heart block.

From the A-V node, ,the impulse of excitation spreads down the bundle of His through its right and left branches and invades the ventricular muscle. In the electrocardiogram this is registered by the QRS complex. If the initial deflection of this complex is downward, it is called a Q wave, the upright component is an R wave, and a downward deflection following an upright wave is an S wave. Normally the R wave is the most prominent, the Q and S waves small or missing, the duration of the complex not exceeding 0.10 second. Alterations in the relative size of the Q, R and S waves are important evidences of change in the electrical axis of the heart, often of enlargement of one or the other ventricle, also in the diagnosis of myocardial infarction. Increase in the width of the QRS complex is known as intraventricular block, and is usually a pattern indicating predominant block in either the left or the right branch of the bundle of His.

The final deflection, the T wave, at the end of ventricular systole, is normally upright in Leads I, II and IV, and usually in III. Alterations in the T wave, as well as deviations of the S-T interval above or below the base line, may result from various disease or toxic states of the myocardium. The duration of ventricular systole is from the beginning of the QRS complex to the end of the T wave (the Q-T interval), and this may be prolonged in various pathological conditions.

Arrhythmias may usually be diagnosed by clinical examination only; occasionally it is difficult or impossible to do so and at such times the ecg. will usually settle the question.

Disturbances of conduction will be revealed—those between the S-A and A-V nodes, and those within the ventricle. Minor grades of A-V heart block can be discovered in no other way, and are often useful in determining the presence or persistence of active rheumatic infection. Block within the ventricles can ordinarily be recognized only by the ecg.

The ecg. informs of enlargement of, or strain on, one or other of the chambers of the heart. This information can be obtained with greater accuracy from clinical and x-ray examination.

Damage to the myocardium itself may be revealed by the ecg. Many of the abnormalities in the ecg. are non-specific, but when carefully correlated with the whole clinical picture, furnish useful information not revealed by the ordinary methods of examination. The ecg. is of help, also, in controlling the administration of digitalis and quinidine.

Most important of all is the value of the ecg. in the diagnosis of acute myocardial infarction. In many cases a diagnosis can be made from the record alone. However, even the characteristic pattern of cardiac infarction may be confused with that of pulmonary embolism or acute pericarditis, and not infrequently there are atypical changes; or the record may have been taken either before great alterations have time to be produced or after they have progressed to a stage when they are no longer specific for an acute lesion.

The ecg. will not determine the degree of impairment of cardiac reserve. It tells us nothing about the functional capacity of the heart. We cannot judge from it whether a patient is suffering from congestive failure or from angina pectoris.

Many of the errors which occur in electrocardiographic diagnosis are due to attempts to use it beyond its limitations, or to attach specific significance to non-specific changes.

TREATMENT OF SEVERE PERIODIC HEADACHES WITH DESENSITIZING DOSES OF PROSTIGMINE

A NEW method of treating migraine with excellent results[1] attracts our attention. The method is

simple and inexpensive. Let us give it a trial and report our results in this journal.

A 15-mg. tablet of prostigmine bromide was dissolved in one oz. of water, and the resulting solution administered as follows: On the first day, 1, 2 and 3 drops were given at morning, noon and night, respectively. The increase of 1 drop per dose was maintained until a dosage of 30 drops was reached, following which 30 drops were given each day for one week and then three times per week for an indefinite period. Occasionally, when it was felt that the results could be improved, the dose was increased to 40 drops. A few of the patients were given the same dosage morning and night, increased by one drop each day until the dose of 30 drops was reached. Then the usual procedure was followed. This method was used when it was felt—on the basis of skin tests—that the patient was unduly sensitive to histamine or acetylcholine.

The patients were skin-tested with histamine before the institution of treatment, and repeat tests were made at weekly or fortnightly intervals. Some were also tested with acetylcholine. Care was taken to swab the skin *lightly* with alcohol before the intradermal injection because vigorous rubbing in itself could produce a reaction in sensitive persons. A 26-gauge Schick needle with a tuberculin syringe was used for the test. The test was read arbitrarily five minutes after injection, traced on cellophane with a skin pencil, and retained for future records.

Often in the initial histamine skin test there was much localized itching, a symptom which was not evident in subsequent skin tests after the patients developed tolerance.

Several persons independently observed that even though a mild headache did occur, it could be dispelled in a few minutes by taking 15 drops of the solution.

A series of 60 patients with periodic headaches with migraines and histamine cephalalgias predominating, were treated orally with gradually increasing doses of prostigmine. The extremely gratifying results which were obtained tend to prove (1) that, in addition to histamine, acetylcholine is a factor in the production of these headaches; (2) that a similar neurobiochemical mechanism is operative in many types of periodic headaches; (3) that prostigmine is as effective as histamine, and more convenient than it, in the treatment of these headaches.

TABLE I

Group	*Type*	*Little or No Relief*	*Moderate Relief*	*Marked to Complete Relief*	*Total No. of Cases*
I	Histamine headache	2	1	17	20
II	Other migraine types of headache	2	1	22	25
III	Fullness in back of neck and dizziness plus occasional attacks of Meniere's syndrome	0	0	8	8

1. L. Pelner & M. E. Aibel, Brooklyn, in *Jl. Lab. & Clin. Med.*, Sept.

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

ALCOHOL AND OPIUM

MAN may be insufficiently intellectual to enable him to deal adequately with most so-called problems. And man may be lacking as much in honesty as in intellect. One seldom comes upon a fellow-mortal who is as diligently in search of truth as Diogenes was of an honest man. We are each chiefly concerned about living our individual lives as easily, as securely and as comfortably as possible. If not prodded by the lack of a necessity, or by disapproving public opinion, most of us would do no work at all. We yearn for comfort, and that is an exceedingly comprehending term. And most of us resent the necessity of the application of that kind and degree of discipline to ourselves that enables us to work. We envy many of the members of the lower level of animal life that are not obliged to carry Social Security Cards and Drivers' Permits and that do not have to go to church at all, nor to partisan political rallies. We instinctively and profoundly resent the habiliments of so-called civilization. Whenever it would seem to be relatively safe we joyously become social nudists.

Man is constantly walking the top rail of the fence. On the one side is the jungle, in which his post-amoebic ancestors lived when the moon and the stars were young. On the other side of the fence are Park Avenues and Universities and churches and libraries and courts and Prince Alberts and top-hats and nylon hosiery and corsets and diamonds and pearls and overalls and calloused hands and feet and toil and wealth and poverty and pomp and suffering and pretense and affectation and honesty sometimes and robbery and arson and murder and hospitals and nurses and drugs and doctors but often pain and wretchedness and ultimately death. Man biologically yearns for the jungle of primitive man. There the Decalogue has never been heard of, and race and color and ancestry and sororities and fraternities and the Cincinnati and the Daughters and symbols of distinction would make as little appeal as

Blackstone's Commentaries.

Man must profoundly and persistently object to civilization. It tends to cabin and to confine him, and by its enforced pretenses and pseudos to fatigue and to disgust him. Always man is looking back over a shoulder for a sight of his ancestral home, back to which he is being constantly called by instinctive urges unutterable. Sometimes he harkens to the call and retrogresses, to be satisfied and to be disgraced. Sometimes man remains apparently civilized and lives pedestalized and admired; unhappy, to be sure, and often wretched.

Did Emerson say that man's chief activity had always been devoted to a search for the fruit that had neither rind nor core? The nurseryman's graftings and cross-breeding have not yet brought forth such a fruit. But hope abides.

Man often tries to live simultaneously on both sides of the fence. This procedure is difficult always, often painful, not infrequently embarrassing, and sometimes ludicrous, and occasionally fatal. Man has found some substances and produced others by the use of which he often attempts to make satisfying instinctual incursions into the jungle, but hoping that his somatic and psychic self may remain intact and immaculate on civilization's side of the fence—in Boston, in Savannah, in the courtroom, in the pulpit, in the gubernatorial office, at the head of an industry or in the home.

The juice of the poppy and the spirit of the fruit and of the grain invite man to partake of them and to forget his poverty and to remember his misery no more. By their temporary incorporation into his physical structure man becomes beguiled through their pharmacological potency away from devotion to the rigid demands of the economic and the social fabrication so long in the building, and he takes a night out. Through the narcotizing effect of the self-medication man renounces the world of anxiety and of labour and of self-discipline and of rectitude and of achievement and of success and he goes back into that ancestral land of his remote progenitors in which there were no inhibitions and no ethics.

Either narcotic, alcohol or opium, by its commingling with man's cellular units, sings the song of the Sirens into man's heart, and he becomes soothed or immobilized by the untroubled unconsciousness of deep sleep. Man's chief discomfort does not arise from his fear of another. His existence is made intolerable for him by the eternal decree that he must live forever in intimate association with himself. He insists upon recurrent sleep, with its asociated unconsciousness, so that he may be briefly relieved of the intolerableness of constant consciousness of self. Sleep liberates man from himself. No man could continue, day after day, to live in uninterrupted consciousness of himself.

Opium and its derivatives are used only medicinally, and chiefly for the reilef of discomfort and of pain. Alcohol, likewise a narcotic, and in its profound effect differing little from that of opium, is even more largely used in industry than in medicine. The use of alcohol probably enters into the fabrication of most products. But alcohol is also a potent poison. The psychological effect of alcohol tends to liberate man from the shackles of civilization and to give him citizenship in the land of the jungle, where his family tree had its origin millions of years ago. But the joy that man may experience as the result of being manumitted by his excessive use of alcohol may evoke the envy of his civilized neighbours, who may bring about his incarceration.

It is difficult to understand how the government that man has helped to fabricate and which he supports with his substance and with his life, if need be, can justify its sale to him of alcohol—a substance, the indulgence in which may deprive him of his mind and later of his life. Yet the government of the United States, of Virginia, of the City of Richmond, are all each busily engaged in debauching their citizenship, civil and military, by selling them a profoundly toxic, habit-forming so-called beverage. That the same governments would be aggressively hostile to those who might seek surcease through the use of opium, a less harmful narcotic, is as far beyond the reach of my understanding as the periphery of the cosmos. The government that sells to its citizens a poisonous so-called beverage, that punishes them for some of the manifestations of their responses to its effects, that doubly and trebly charges them for it and that professes to believe that its motivations are beneficent is diligently engaged in stirring-up the wrath of the public.

Man has too little honesty to enable him to deal wisely with the alcohol problem. He may also be lacking in adequate intelligence—quantitative or qualitative, or both. Man has never solved the alcohol problem. Has he ever solved any other problem? It is strange that man utilizes so much of his energy in trying to deceive both himself and his fellow-mortals.

THE SLIPPING RIB CARTILAGE SYNDROME

(J. F. Holmes, Manchester, in *Jl. Maine Med. Assn.*, May)

Slipping rib cartilage is a loosening deformity involving the anterior ends of the anterior cartilages of the eighth, ninth and tenth ribs on either side. It is not concerned with the osteochrondral articulations.

It begins with a loosening of the attachments of the anterior end of the rib cartilage which may occur at once, or over a period of time, and is followed by a curling upward of the cartilage-end. It is always of traumatic origin, either direct or indirect, more often the latter.

The pain manifestations cover a wide field. Diagnosis is made from the history of pain in the chest or abdomen, usually in the anterior chest at, or near, the rib borders. There is a localized pain at the site of the lesion. By digital manipulation, with the patient in supine position and the knees flexed, the abnormally loosened and deformed cartilage can be brought out over the rib border with a click and a pain that are diagnostic.

The pain is usually a dull ache, and is often tolerated for years, even a life-time. Some patients have come to accept their condition as normal, until operation gives relief and reacquaints them with their real normal. Others suffer severely, and are acutely and completely incapacitated. Many cases of obscure pain in the chest and abdomen have their origin in the slipping rib cartilage. Examination of the rib borders should be made routinely.

The acute condition should be treated conservatively. Later in the course, if the symptoms persist from one to three months with sufficient severity, excision of the loosened, deformed cartilage or cartilages results usually in immediate and permanent relief of symptoms.

THE MERCIFUL COLOSTOMY

(T. R. Peyton, Philadelphia, in *Med. Rec.*, Sept.)

Lymphogranuloma venereum, hitherto known as the *sixth*, later as the *fourth*, now as the *third*, venereal disease, has risen in the scale of occurrence because it is now more readily recognized. The day may come when the Frei test will be as common a procedure as the Wassermann in the establishment of diagnosis.

The use of an artificial anus is not as inconvenient as is generally thought. Persistent argument and intelligent explanation may induce the patient to submit to a colostomy. A stoma which is healthy and is not allowed to stenose may be cleansed easily; and a simple light bandage applied over it, worn as a belt, does not give the least hint of its presence. Also, herniation does not occur as frequently as when some of the cup-like apparatuses are used which predispose to herniation. An enema in the morning and perhaps a small wash-out at night should suffice and prevent any accident during the day, thus permitting any ordinary activity during work hours. The diet should be regulated so that bowel movements would not be encouraged.

In order to spare the patient the frequent bloody and pussy stools, the toxic absorption and morbidity of focal infection, the multiple fistulas often involving the vagina or vulva, the colitis and straining at defecation, the tearing of scar tissue in attempting dilatation and the mental torture of lymphogranuloma venereum strictures may be truly considered an act of mercy.

It is believed that the mere presence of oral aciduric bacteria is not the important factor in dental decay, since just as highly acidogenic types were obtained from those who are immune as from those who have carious teeth. Other factors seem of greater significance.—H. J. Florestano, in *Jl. Dental Research*, June.

CLINICAL CHEMISTRY and MICROSCOPY

For this issue John Elliott, Sc.D., Salisbury, N. C.
Director Laboratory of Pathology, Rowan General Hospital

A PROCEDURE FOR PROVING BLOOD GROUPS THAT SHOULD ELIMINATE ERRORS IN GROUPING AND CROSS MATCHING*

In 1901 Landsteiner postulated two agglutinogens, A and B, and two agglutinins, alpha and beta, and assumed a reciprocal relationship that explains why homologous plasma and cells do not agglutinate. This postulate assumed that in any case in which agglutinogen is present the corresponding agglutinin is absent, and the converse.

The chart below shows the relationship of agglutinogens and agglutinins:

Agglutinogens				
Red Cells	AB	A	B	No
Agglutinins				
Plasma	No	Beta	alpha beta	alpha

Blood is grouped according to its agglutinogen content. By mixing known stock A and B serum with unknown red cells the unknown blood can be assigned to one of the four blood groups. However, *weak stock typing sera or weak agglutinogens in the red cells being typed may result in the assigning of blood to a group other than the one to which it belongs.* This error may or may not be detected in the cross-matching. If it is not found during cross-matching an incompatible blood reaction may occur during or following transfusion.

Landsteiner's postulate that when an agglutinogen is present the corresponding agglutinin is absent can be utilized to prove blood groups and thus eliminate the errors that occur from failure in the typing of sera and errors in grouping or cross-matching.

The technic is very simple: serum from the blood being typed is grouped by recently collected known A and B red cells. If the blood belongs to the group suggested by typing, its serum will act as indicated below.

Example: Blood grouped as 0 should have both alpha and beta agglutinins. Its serum must agglutinate both known A and B red cells. Failure to agglutinate one or both would prove the original typing to be in error.

Blood Group	(*Red Cells*)	*Serum*	*Plus Known A Cells*	*B Cells*
Group AB	Both agglutinogens	(No agglutinins)	No agg.	No agg.
Group A	A agglutinogen No B.	(beta agglutinin) No alpha	No agg.	agg.
Group B	B agglutinogen No. A.	(alpha agglutinin) No beta	Agg.	No agg.
Group 0	No agglutinogens	(Both agglutinins)	Agg.	Agg.

*Presented as Exhibit at the First American Congress of Gynecologists and Obstetricians at Cleveland, Sept., 1939.

HOSPITALS

R. B. Davis, M.D., *Editor*, Greensboro, N. C.

I AM OPPOSED TO IT

This could be stated about a thousand different questions today but the one the author has in mind is that of superseding the nursing profession with pseudo nurses put out with partial training and an inadequate background. The readers of *Southern Medicine & Surgery* will recall that for a number of years this department has earnestly sought the coöperation of the Graduate Nurses' Standardization Board in a program whereby smaller hospitals could afford to run training schools. However, the persuasive power did not carry authority and, therefore, failed; yet it is not too late and it is hoped that this last warning may be carefully pondered by the Nurses' Standardization Board.

The scarcity of nurses in training and of graduate nurses is being keenly felt all over the nation; the demand and the supply rule has been seriously upset. The alarming part of it is that it has only *begun* to pinch. When the hundreds and thousands of wounded and sick soldiers return to be nursed back to health, the drain upon the nursing profession is going to be much greater and they are thoroughly inadequate numerically to meet this patriotic call. If the Standardization Board will allow the smaller hospitals to open their training schools, it will immediately relieve a considerable amount of pressure. Many of the graduate nurses would be relieved for a more highly trained service. In many instances, a student nurse, properly supervised by a graduate, will do just as satisfactory work as a graduate and yet, it would be very unwise to attempt to send the student nurses out after six months to one year's training.

Many of the smaller hospitals, and some of the larger ones, have taken on so-called nurses' aids who are being paid a small salary and being taught half-heartedly a few principles of the art of nursing. In many instances these girls are unfit as to background and preliminary education and their general attitude concerning a responsible position. It is true, however, that there are some who are smart and energetic and who should be in a three-years training school to become regular nurses, but who are prohibited from doing so because of the high cost of the preliminary education as well as the actual training expense. These girls will catch on quickly and make the best of their opportunity but I am emphatically opposed to sending them out after six months to one year's training. There are two very definite reasons for this opposition. The first, and foremost, is that the nursing profession is one of the greatest professions, in my opinion, that has ever been open to womanhood. I am in favor of its standards being high and its requirements thorough. However, this does not mean that the requirements and standards should be prohibitive and this is what they have been in recent years. The other reason is that these young ladies who are trustworthy and who will make good nurses are deprived of the privilege of continuing their course and becoming graduate nurses, and this is unfair to these girls. It is also unfair to the graduate nurses to send out hospital half-trained nurses aids who will call themselves practical nurses.

Other than winning the war, no single thing could happen in the public life of the author, nothing could bring as much pleasure and satisfaction to him as that of helping to create a new set of standards and requirements for the nurses' education. In these requirements, I would put first a proper attitude and loyalty to the job accepted by the applicant. It is quite easy for any girl today to get a high school education; beyond this it is not necessary that she put more time and expense in preliminary work. The second alteration would be to change the curriculum so that the pupil-nurse would learn the art of nursing first, last, and always, and after that, the science. Will not the readers of this magazine join me in a crusade for a more practical and a more serviceable curriculum for a nurses training school? Let us not dilly-dally any longer. We must nurse the sick and wounded soldiers who have given their all to protect democracy and our homes. We must not fail them by sins of omission and commission. Work we have to do to succeed, work we must.

So many teachers are specialists, and each of them is prone to see the afflictions of mankind through the narrow slit of his own specialty. The nose and throat man can trace nearly every malady to some orificial sepsis. The cardiologist can hardly find a sound heart. To the tuberculosis specialist, every lung is a little suspicious. The surgeon thinks the knife is the only therapeutic agent worth considering. The genito-urinary specialist sees mankind through a syphilitic fog.—S. W. Douglas, M.D., Eudora, Ark., in *N. O. Med. & Surg. Jour.*, 1938.

Haas' *History of Medicine* says that about the time of Christ: Accordingly there appeared a phenomenon which always manifests itself when the profession is overstocked; many became oculists, aurists, surgeons, dentists, uroscopists, bleeders, catheterizers, clysterizers, herb-doctors, milk-doctors, gynecologists, movement-curers; specialists for private disease, for fistulae, in the cosmetitc art; wine doctors, hernia-doctors etc.

Haas' says also that in the early 19th century as "A result of the French studies in pathology, in many respects an unfortunate outgrowth was the cultivatiton of specialists."

THE TREATMENT OF BRONCHIAL ASTHMA WITH PERTUSSIS VACCINE

(H. B. Sokal, Brooklyn, in *Med. Rec.*, Sept.)

Rackemann divides asthma into two large groups: A, intrinsic or hereditary asthma; and B, extrinsic, or bacterial asthma.

Since, as a practitioner, I have to rely for the most part on bedside observation, I prefer this clinical classification based on the severity and frequency of the attacks:

A. Severe asthma, including status asthmaticus.

B. Active asthma, frequent attacks requiring adrenalin for relief.

C. Abortive asthma, asthmatic attacks limited to dyspnea and wheezing, without the spastic phase.

D. Latent asthma, asthmatic attacks, but free of symptoms for long periods.

In bronchial asthma everything from adrenalin, the most potent drug, down the alphabet to vitamins has been tried, most often with complete failure.

Called to attend a woman in her forties, hourly attacks requiring large doses of adrenalin for fleeting relief, the analogy with whooping cough forced itself upon me.

This similarity of symptoms was too tempting for a man not deeply rotted in allergy. On my next visit I injected pertussis vaccine (in addition to five c.c. of her own blood). Within 48 hours all attacks ceased.

A 12-year-old girl suffering from bronchial asthma whom I had seen a year previously, since in a university hospital, had a complete "work-up" was discharged with a syringe and a bottle of adrenalin to shift for herself; now in a much worse condition than before, with attacks coming every hour or even more frequently. With the consent of parents, I repeated the treatment exactly as in the first case. Within two days all attacks ceased. In a brief period 4 other cases were so treated with similar results.

The reactions following the vaccine treatment may be general, systemic or focal, t. up to 104° may appear after the second injection. It requires no treatment and will subside within three or four days.

Some pain is felt in the area of injection. One patient developed what looked like a cellulitis with swelling of the axillary glands.

Nearly all patients report an increased expectoration of a greenish, purulent sputum in place of the previous viscid material.

Since practically all had been thoroughly studied in a clinic or hospital, I did not see any reason for repeating the procedure.

Blood counts, sputum examinations, and intradermal skin tests with 0.01 c.c. of the vaccine were made in most cases.

Two patients failed to improve after receiving six and eight injections, respectively.

There are grave doubts whether the two patients who did not respond to the vaccine treatment were asthmatic. Both were women of 60; neither had experienced an asthmatic attack. In one not a single eosinophile cell could be found in the blood smear; the other had an eosinophilia of 3 per cent. The skin reactions to the vaccine were negative. A subcutaneous injection of adrenalin was without effect. The only reason they thought they had asthma was that the medical clinic referred them to the asthma clinic for treatment.

Patients in status asthmaticus are as a rule relieved within 48 hours after the first injection and the attacks controlled with two to three vaccine injections. Relapses have occurred in groups A and B, none so far in group C. Whether these relapses were due to insufficient treatment or whether they would have occurred even after a prolonged course of injections, I do not know.

Four patients who continued with the treatment for three to six months have been completely free of all asthmatic symptoms until now, a period of from one to three years.

Twenty-two cases of bronchial asthma treated with pertussis vaccine are reported. The treatment is harmless and simple.

GLUCOSE IN LIVER DISEASE

(F. F. Boyce in *N. O. Med. & Surg. Jl.*)

Glucose is the sheet anchor of therapy in hepatic disease, and any other treatment is additive and never a substitute for it. Oral administration is surprisingly effective.

The identification of the jaundiced patients who are likely to bleed is the first consideration in the prevention of the catastrophe. Corrective therapy includes the supply of vitamin K in combination with bile salts and a minimum proportion of fat in the diet, in addition to glucose therapy. Transfusion is of temporary benefit in the occasional case.

Decholin (dehydrocholic acid) improves liver function, particularly when combined with glucose therapy. It also can be given by mouth.

CAFFEINE added to sodium pentobarbital medication increases the coöperation and lessens the excitability of the parturient patient.

FOR EARLY DIAGNOSIS OF CANCER OF THE COLON

(Knox Brittain, Rochester, N. Y., in *Amer. Jl. Dig. Dis.*, Sept.)

The chief cause of failure to cure cancer of the large bowel is late intervention. The first consulted physician, who fails to realize the importance of the complaints, must shoulder much of the blame.

Since early cancer produces no specific signs and disturbs the usual bowel habits so little, the physician will always do well to suspect malignancy until its absence is proven.

Unless a sigmoidoscopic investigation is included, few gastro-intestinal examinations should be considered complete. The finding of hemorrhoids or a fissure should never deter the physician from a röntgenologic examination of the entire colon.

TABLE I

Frequency of symptoms in each group:

	Rectal %	Left Colon %	Right Colon %
Bowel changes	77	60	50
Pain	39	67	54
Blood	67	33	21
Loss of weight	38	44	55
Weakness			24

TABLE II

Conditions treated prior to discovery of a cancer:

	Cases
Hemorrhoids	15
Anemia	8
Diarrhea	5
Colitis	4
Hernial	4
Cataracts	2
Goitre	1
Psychosis	3
Gastric ulcer	3
Coronary disease	1
Gallbladder disease	1
Urinary frequency	1
Salpingitis	1
Uterine suspension	1
Chronic appendicitis	1

Should all other signs indicate the presence of cancer, surgical exploration should be carried out *regardless of a negative x-ray report.*

A MINIMUM of three months' bed rest is recommended for the patient in all cases of coronary thrombosis.—J. A. Bradley, in *Jl. Fla. Med. Assn.*, Sept.

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DISCUSSION ON MINERAL AND VITAMIN REQUIREMENTS IN RELATION TO WAR-TIME DIETARY

AT A MEETING of the Royal Society of Medicine of London held last summer[1] the facts as to vitamin need and supply were gone into thoroughly.

Most of us, the opening speakers said, are eating foods today which never graced our tables in the days of peace. Milk has been diverted to provide all school children with an extra third of a pint a day. The present rations of milk and cheese provide men, women and children with as much calcium as they were in the habit of obtaining from those two foods before the war. People are eating more bread and potatoes to make up for the shortage of fats and sugar. The iron gained by the change from white to national wheatmeal bread fully compensates for the iron lost because of the restriction of meat.

But, and here is a jolt for our whole-wheat friends, absorption of calcium and magnesium is very much better from the white than the brown bread diets, iron also. Brown bread interfered in some way with mineral absorption. Could it be the laxative action of the brown bread? Brown bread increased the weight of the stools by two to three times. Or was it that the phytic acid precipitated the calcium and the iron in the intestine and prevented their absorption? Mellanby soon after the last war stressed that cereal diets tended to promote rickets in growing puppies and that, brown flour was worse in this respect than white, oatmeal worst of all. In 1934 the toxamine inositol hexaphosphoric acid was found to be present in large amounts in the outer parts of the cereal grains. In 1939 it was shown that the addition of sodium phytate to puppies' diets led to rickets. Some commercial phytin, converted to sodium phytate, was added to the dough in the preparatiton of white bread so that the bread contained as much phytic acid as the brown bread. Metabolism experiments were then carried out as before, using diets in which this bread contributed 40 to 50 per cent of the total calories. Absorption of calcium and magnesium were depressed even more than on the brown-bread diets, and some subjects excreted more calcium in the feces than they took in the food. Phytic acid was therefore incriminated as the noxious agent in brownbread.

Metabolism experiments showed that vitamin D did little or nothing to improve the absorption of calcium by adults. The addition of enough cal-

1. *Proc. Royal Society of Med.* (Lond.), July.

cium carbonate to the bread, however, effectively preciptated all the phytic acid and so left the calcium in the remainder of the diet available for absorption. This was the cheapest and simplest way of correcting the ill effects of brown bread upon the absorption of calcium. Fortification of the food would be the only way to cope with an iron deficiency due to phytic acid. It was found impracticable to dephytinize wholemeal flour and to retain its palatable properties. Bran, however, could be dephytinized enzymatically, and the product has been used to reconstitute a flour with all the laxative properties of brown flour but containing on phytic acid. Although the hydrolysis of the phytic acid in brown bread improves the absorption of calcium, it does not make the absorption as good as it is from white bread unless the inorganic phosphates which are formed by the hydrolysis of phytic acid are also removed. This dehytinizing process is quite impracticable on a commercial scale for the whole country but small quantities of patent foods for children or invalids could be so produced.

The Government has now introduced a flour containing 85 per cent of the original wheat. This will bake a loaf with properties intermediate between those of white bread and bread made from 92 per cent extraction flour.

Evidence was found that many diets were short of calcium before the war. They may or may not contain as much calcium today, but what they do contain is probably not so well absorbed. It was suggested therefore that war-time bread be fortified with $CaCO_2$ (in the form of creta preparation B. P.) 14 oz. per 280 lb. flour, or 0.5 grain Ca per 1 lb. bread.

Another discussant brought out the excellent point that normal does not mean optimal. Before the war children having extra milk acquired a better state of nutrition than "normals", as shown by their improved gains in weight and height by increased high spirits (naughtiness), glossier hair, better finger nails &c. The beneficial results of supplementary feeding during maternity in recent years were cited.

An excellent example of a sub-clinical deficiency is seen in anemia so moderate that it would usually escape notice at medical inspection. The provision of extra iron raised the hemoglobin levels reduced the morbidity rates in the group, proving there was a true subclinical deficiency.

In young animals on a diet deficient in vitamin B_1, growth is sub-optimal. A relatively small dose of vitamin B_1 will prevent symptoms of beri-beri, a larger dose will maintain constant weight; a still larger dose will procure mediocre gains in weight; and increasing doses further improve the weight although to all intents and purposes the animal appears normal on inspection without such increased intakes. Three well-defined specific effects of sub-clinical deficiency of vitamin B_1 in animals are (1) sub-maximal growth rates; (2) gastro-intestinal hypotonia; (3) latent metabolic defect (in carbohydrate metabolism). The same three phenomena are seen in man. Babies and children given extra vitamin B_1 improved their weight gains from average to a truer normal. Tests for latent defect in carbohydrate metabolism indicate low levels of intake in man even when there are no symptoms of what we know as deficiency.

Recent large-scale investigations support the view that the addition of extra vitamin C to war-time diets gives increased resistance to infection, promotes healing of wounds and increases weight and height in children. Since there is such a thing as a partial deficiency, how is it to be detected? Two facts emphasize the urgent need for such tests. First, the onset of advanced deficiency may be disconcertingly abrupt. Secondly, it is important to be able to follow the effects of restrictions in the national diet and keep a watchful eye on any tokens of falling levels—this can be done by examination of representative groups of the population.

Standardized test doses of vitamin C are given daily under controlled conditions, and the number of days is counted until the subject is approaching his plateau of excretion. With children who have been receiving the reputed requirement of vitamin C (30-50 mg. per day), "saturation" is attained on the first or second day. With developed scurvy seven to 10 days of such dosing are needed. An intermediate number of days needed to saturate denotes an intermediate level of nutrition.

There is a shortage of fresh fruits and other carriers of vitamin C during the winter; potatoes are the principal source of vitamin C in winter, and 11 oz. of them daily are needed to provide only one-half of the League of Nations requirement of vitamin, 30 mg. After the summer, all groups of children examined were at a reasonably high level; after the winter most of the poor children examined low. These findings justify the decision of the Government to set aside supplies of vitamin C for young children.

The dark-adaptation test for detecting subclinical deficiency of vitamin A is sufficiently specific for vitamin A by the simple expedient of ascertaining if there is failure of improvement in the absence of vitamin A, but, response after the vitamin is administered in large quantities. The intake of vitamin A is better now for very much more milk is drunk in schools, margarine is fortified with vitamin A, and raw carrots in cellophane wrappings are supplied by shops and relished by

the children in the absence of the wonted sweets and chocolates.

A saturation test is available for vitamin B_1, also for nicotinamide. The substitution of flour of 85 per cent extraction for white flour has largely removed the likelihood of serious deficiency of both these factors.

Iron deficiency was one of the most prevalent deficiencies in the present diet. An overwhelming case for adding to bread traces of iron salts that were available to the body. The miner frequently eats the whole of the animal protein food in the ration of the family. A survey of 1935-6 showed that the poorest 10 per cent of the community averaged 8 mg. of Fe as the daily intake, and that 50 per cent of the community had an intake of less than the requisite minimum of 11.5 mg.

The innovation of 85 per cent extraction bread increases the Fe of the average diet by about 2.5 mg. per day, without disturbing the supply of Ca or P which comes from milk. Superficially then, from this standpoint, the change in bread is all gain. There is a report suggesting that the higher extraction meals are a poorer source of available Fe than is white four; these conclusions appear just, but they cut so firmly across one's general ideas that one scrutinizes them with a mind even more critical than usual. One must not forget the other side of the picture—those the world over who eat wholemeals of one sort or another, the schools which supply only whole wheatmeal, and those who from preference or persuasion eat little other cereals, and are usually healthy, vigorous, non-anaemic persons.

Another member reported his experience of glossitis in which some cases were relieved by nicotinic acid: of cheilosis and several cases of acne rosacea much improved (on occasion apparently cured) by riboflavin; of vitamin B_1 deficiency shown in loss of appetite and gastrointestinal disturbances; of intellectual lethargy shown in mental fatigue and lack of power of concentration, as well as cases of neuritis, in which last also it seemed that vitamin B_1 given in larger doses had contributed to recovery. Of the relation of vitamin C deficiency to gingivitis. He expressed the opinion that vitamin D deficiency is responsible for certain cases of "rheumatism" in the back.

Professor J. R. Marrach found no evidence of excessive destruction of ascorbic acid in the preparation and cooking of vegetables. Too much faith should not be placed in the use of raw vegetables. The weight of vegetable, that would be regarded as an ordinary helping when cooked, looks an enormous amount when raw.

Iron could be added to table and cooking salt, and this might be a practical way of increasing the nation's iron intake.

HEALTH ASPECTS OF FUEL SAVING

I. Safe Minimum Indoor Temperature

After believing for generations that ventilation was a chemical problem involving poisons gases and too little oxygen or too much carbon dioxide, we have now returned to the ideas of the ancients that the problem is chiefly physical and has to do largely with air movement, and temperature and moisture content, that ventilation is not so much a matter of what we breathe in through our lungs as it is of how the skin and body react. Clean air of a chemical composition within reasonably normal limits is necessary for satisfactory ventilation, but it is more important to ventilate for the heat regulating mechanism of the body.

Just as an *ideal* temperature, *irrespective of humidity and air motion*, does not exist, so also a *safe minimum* temperature does not exist without these other influencing factors. However, opinions recently gathered from medical and public health authorities of the United States, preliminary to the preparation of this report, suggest that the following, without regard to other factors, may be considered minimum for emergency requirements of fuel oil rationing with the kind of clothing and humidification now used:

1. *Safe Minimum Indoor Temperatures*

(a) For the average private home—60-68 (majority opinion 65)
(b) For the average apartment house—60-68 (majority opinion 65)
(c) For hospitals and sanatoria—68-80 (majority opinion 70, except operating rooms 80)
(d) For schools—60-70 (majority opinion 65)
(e) For department stores, office buildings, etc.—60-68 (majority opinion 65)

Some have suggested that department stores be reduced to a very low temperature (possibly as low as 50° F. dry-bulb) except for office spaces, since customers are properly dressed for outside weather and clerks are fairly active and can dress appropriately.

For general hospital wards a minimum temperature of 65° F. may be satisfactory where patients remain in bed or if ambulatory patients are provided with a 70° lounging room. Operating rooms and nurseries require higher temperatures.

In the hospital or sanatorium treatment of tuberculosis, authorities do not feel that reasonably low temperatures (from 60°-65°) are in any way harmful, although they usually prefer 65°-72°. It is agreed, however, that the very low temperatures once advocated have no special merit in treatment. It is believed, in general, that high temperatures (over 70°) are not necessary and temperatures running to 75° or over may be undesirable.

Thermostats in all locations should be properly

Revised from an article prepared for the Fuel Rationing Division by Leverett D. Bristol, M.D., Dr. P.H., New York, and member of the Fuel Oil Rationing Advisory Panel.

adjusted and reconditioned, if necessary. The thermostat should be supervised and manipulated by one person, as far as possible, rather than by several different persons. Simple, daily records of indoor temperatures both day and night should be kept by householders for more intelligent control of heating.

II. Procedures to Offset Reduced Temperatures

1. *Insulation, Weather Stripping and Humidification*

Reduction of room temperature may be a relatively small item in saving fuel. Yet a lowering from 72° to 65° may decrease fuel consumption by as much as 10-20 per cent. However, proper insulation of walls and attic floors and the use of storm sash and doors may cut down fuel needs by as much as 60 per cent. Every effort should be made to accomplish such insulation.

Ventilation in the average place of work is more satisfactory than in the average home or apartment house, since the latter are often greatly overheated. While mechanical air conditioning may not be feasible for the average home, much may be done to improve conditions for members of a household. The chief fault in most homes is the lack of proper indoor humidity. The air of rooms in winter is generally overdry, with resultant discomfort, and predisposition to various abnormal conditions, particularly of the respiratory tract. Reducing somewhat the temperature in the home simplifies the problem of maintaining the proper moisture content in the air. Also, properly humidified air is comfortable at several degrees lower temperature than dry air. At 65° or less, artificial humidification is generally unnecessary because laundering, bathing and living activities result in adequate humidity for normally healthy people. Artificial humidification need be undertaken only upon the specific direction of a physician.

So far as possible, windows and doors should be kept closed, except for minimal essential ventilation. Drafts should be controlled, as cold is better borne when the air is still. We should not, of course, return to the dark area of *no ventilation.*

2. *Attention to Room Requirements*

In homes and apartment houses, little or no attempt should be made to heat the bedrooms, except those occupied by infants, aged or ill persons. The bathroom should be kept warm and a schedule set up for dressing and undressing there so that bedrooms may be kept at temperatures not over 60°. Provision should be made for warm night clothes and bed coverings.

Living rooms in which occupants spend most of their time should be kept at a suitable temperature at the expense of the dining room, halls and kitchen. Kitchen occupants usually are active and the room receives heat from the range and electrical appliances. Considerable heating savings can be effected by lowering the temperature to 50° at night, and by the use of local zone-radiant heaters, where electrical power is available. It should be kept in mind that, in general, temperatures may have to be regulated for an apartment house as a whole rather than for individual apartments.

3. *Development of Adequate Health Habits*

It is well to remember that reduced indoor temperature is less apt to injure persons in good physical condition than those who are not. It is more necessary to form good health habits now than ever before. Outdoor exercise, sunlight and nourishing food are important. Adequate clothing and foot-covering should be worn. Over-fatigue should be avoided. "Early to bed" has both health and fuel-saving values.

4. *Use of Additional Clothing*

Indoor comfort and health during the cold months of the year depend just as much on (a) individual adjustments of clothing according to personal susceptibility to lower temperatures and drafts, as on (b) proper heating and ventilation. As far as reactions to cool moving air are concerned, double comfort standards between men and women, and even individual differences, actually exist and are due largely to differences in dress or clothing, although there may also be minor constitutional differences.

A temperature, with greater or lesser movement of the air, that is comfortable to men is as a rule too cool for women, and that which is acceptable to women is too warm for men. As a result, homes and buildings tend to be overheated in winter for the sake of women occupants. This fact is not surprising. A man's clothes weigh, on an average, about six pounds, while a woman's usually totals about two. Clothing weights and texture vary to a considerable extent in either group.

A heavier dress or suit, an extra undergarment or over-garment, when necessary, will make a great difference in indoor comfort. Every person should realize that he is his own *clothing engineer,* and that he may do much to find winter health and comfort in spite of an overcool room. *Wear a sweater and help win the war* is a worth-while slogan, especially for women members of a household.

It is important for the public to understand that by a reasonable amount of extra clothing the body adjusts itself readily to temperatures at least ten degrees below what we in the United States consider the standard temperature for dwelling houses. Experiences of those in foreign countries attest to this fact. Some medical and public health authorities have indicated that not only would it be safe, but actually beneficial, to keep temperatures quite a few degrees lower than the commonly accepted

standard if additional clothing is worn. The English belief, from experience with *radiant heat,* is that a 60° F. dry-bulb temperature is adequate if room occupants are properly clothed.

a) You can be healthy in a house heated to only 65°. That's cooler than the average we are used to—*but it is necessary* in view of the supply situation.

b) You can start your burner late this Fall, later than usual—and keep it low during the warm spells. Fuel is a weapon in this war, remember—*Use It With Care!*

c) You can wear warmer clothing. With only a reasonable amount of extra clothes, your body will readily adjust itself to 10° below what we in America have considered standard temperature in our homes—our forefathers did it!

CARE OF THE PATIENT WITH CANCER

THE FAMILY DOCTOR should get his patients who require major surgery to the surgeon in condition to best withstand the ordeal. Promptness in sending or taking cancer patients for surgical treatment is one means of accomplishing this. Another is to give proper treatment for anemia and other general conditions which reduce the chances of recovery and prolong hospital stay.

An article[1] from which we may learn much of value is the source of the information which follows, mostly by way of reminding.

The patient with cancer should be considered chronically ill, a poor surgical risk, and a candidate for radical operation and requiring diligent supportive preoperative and postoperative care.

That some degree of arteriosclerotic heart disease exists is a reasonable assumption. The routine use of electrocardiography and chest plates is worth while. Impaired renal and hepatic function, diminished vital capacities, obesity, diabetes, hypertension and vesical retention are frequent concomitants of cancer.

The presence of acidosis, ketosis and hypoproteinemia may be presumed. Hypoproteinemia is an index of malnutrition. Malnutrition invariably presupposes the existence of avitaminosis. Hypoproteinemia likewise predisposes to shock, edema and great impairment of wound healing.

Particularly in cases of gastrointestinal neoplasm, fluid electrolyte imbalance is a safe general assumption. A great incidence of serious surgical problems in water-electrolyte balance may be anticipated in a series of cases of cancer.

The threat of overtaxing the circulation and precipitating pulmonary edema or congestive heart failure must be borne in mind when infusions or transfusions are administered to a middle-aged patient.

The patient with cancer has a greater susceptibility to shock because of lowered serum proteins, degenerative changes and anemia as well as the magnitude of the operative procedures. Hematocrit readings and determinations of plasma protein and specific gravity are indicated in prevention—of the utmost importance because advanced shock is generally irreversible. Attempting to combat shock by administration of dextrose-saline solutions is to confuse the problems of shock and fluid-electrolyte balance. Prompt administration of plasma or blood is of greatest avail.

Anemia is to be expected of patients with cancer but it is seldom corrected prior to operation. Anemia predisposes to shock, edema and poor wound healing.

Postoperative pulmonary complications are more common among patients over 50. Anesthesia and operation must not be prolonged.

Immediate operation on the patient with cancer without intensive preoperative preparation and postoperative care based on the requirements courts an often avertable disastrous end result.

ANEMIA IN OFFICE PRACTICE

THE CLEAREST expression seen in recent years on the anemias, and at the same time the most hopeful, is that of Philadelphia's clinician.[1]

The following abstract, in detail, is passed on, with appreciation to author and exchange.

To treat either anemia or fever as a disease *per se,* although occasionally necessary, is generally a confession of diagnostic failure.

A 70-year-old dowager-widow, under my care with diabetes mellitus for many years, not long ago complained of leg discomfort, sore mouth and weakness. My technician, requested to recheck the blood sugar, notes that the blood looks thin, proceeds beyond my order, and, in addition to the satisfactory blood sugar, reports—despite the routine count made last year was good—1,500,000 reds, 4,000 whites, 40 per cent hgbn., macrocytosis—pernicious anemia.

Regular service to this patient was faulty, and might have continued so, but for good luck and a good technician. Liver extract therapy brings about a remarkable comeback, to the dismay of relatives who were waiting and watching hopefully. *Pernicious anemia may creep into the accustomed picture of elderly chronics with few or no signals. Accurate periodic blood counting is essential in good office practice.* The same remarks apply, and illustrative cases could be adduced, concerning leukemia and progressive anemia from silent hemor-

1. G. L. Robillard & A. L. Shapiro, Brooklyn, in *Arch. of*

1. Thomas Fitz-Hugh, Jr., Philadelphia, in *Va. Med. Monthly,* July, 1942.

rhage, cancer or aplasia.

A middle-aged bookkeeper says she suffers from low blood pressure, acidity and has always been anemic. She elaborates. Iron "shots" are said to be necessary to keep her going. I question, examine and find nothing, my technician's blood report is normal.

The woods are full of "low blood count" patients who have nothing wrong with their blood! The pseudoanemic medical customer is rarely satisfied with "honest" scales. She may soon return to a shot-in-the-arm specialist who continues to find her hemoglobin fluctuating precariously between 70 and 80 per cent, Talquist scale. Under the most expert technique there is a 5 per cent variation in hemoglobin readings, average 10 per cent, 20 per cent error is not very unusual! A meticulous hematological-clinical examination must be carried out before one may have the temerity to say your blood and blood forming organs are healthy.

We know that several hypodermics daily of the best parenteral iron medicament hardly equal in hematinic value a few iron pills by mouth, that the Talquist hemoglobin reading is little, if any, better than a good look at the patient in broad daylight.

A good clinical-hematological examination includes: (1) an intelligent history, based on knowledge of significant data; (2) examination of skin —color, jaundice, rash, purpura, nodules; (3) tongue mucosa and gums; (4) lymphnodes, liver and spleen; (5) complete blood count, retriculocytes, platelets, fragility (sometimes); (6) sometimes sternal marrow; (7) usually gastric analysis; (8) node biopsy when indicated; (9) bilirubin and urobilin study; (10) hemoglobin in stools and urine; (11) in some cases bleeding- and clotting-time and prothrombin determination; (12) sometimes x-ray of mediastinum and bones.

A lad of 14 was carried into the office in the arms of his father. This boy had been just discharged from a neighboring hospital with a diagnosis of hopeless juvenile hepatic cirrhosis, taken home to die. The family doctor, however, wasn't satisfied. The lad had become acutely ill with progressive obstructive jaundice, vomiting, abdominal pain, putty colored stools and fever of three weeks' duration. Examination disclosed deep jaundice, somnolence, purpura, enlarged spleen and a liver mass. The blood count was normal except for trifling anemia and slight leukocytosis. Terminal juvenile cirrhosis is a rare disease and this boy had upper abdominal pain at the onset; perhaps his jaundice and purpura are due to gallstone obstruction of the common duct with secondary liver degeneration. But why the splenomegaly? The most common cause of gallstones in childhood is hemolytic ictero-anemia, which would account for splenomegaly and gallstones; and the common-duct obstruction would account for the rest. At the end of an hour I had the answer: Retriculocytes 12 per cent; fragility 0.650-0.450. Diagnosis: Hemolytic ictero-anemia presumably complicated by stone obstruction of the common duct. Hospitalization, transfusion and vitamin K, operation with removal of stones from gallbladder and common duct, tube drainage of duct for a month, splenectomy—cure! I had the pleasure of presenting this lad six months later to a medical gathering in Atlantic City. He had gained 20 pounds, grown an inch and was hematologically and clinically well.

An automobile mechanic, referred because of failing vision, weakness and indigestion, unable to work for six months, ailing for two years. Anemia was first discovered in 1939 when the patient had otis media. By various doctors he was treated with iron "shots," liver, iron and copper pills, vitamins and transfusions. An ophthalmologist thought he had a brain tumor. Another doctor thought he had stomach ulcer.

Examination: pallor, smooth tongue, absent knee-jerks, and ophthalmologic appearance suggesting optic atrophy. Blood count—1.6 million red cells, 38 per cent hgbn., 3,500 leukocytes and marked macrocytosis. Complete achlorhydria.

No one had told him he had pernicious anemia. The other possibilities were aplastic anemia and aleukemic leukemia. I advised him to enter the hospital (for sternal marrow examination and x-ray studies). He refused. I then told him if he would take treatment for one week I could determine whether or not I could help him. He agreed to this trial period and 1 c.c. of reticulogen was administered every other day. On the fifth day his reticulocytes (previously 0.5 per cent) were 14 per cent, on the sixth day 25 per cent. From then on recovery was dramatic—as anyone might predict on the conclusive diagnosis of pernicious anemia. He now has 5 million red cells, 95 per cent hemoglobin, has gained 15 pounds and is back at full-time work.

To neglect to observe the reticulocyte crisis which comes in 4 to 8 days after start of parenteral treatment in pernicious anemia in relapse is to be inadequate. Patients with pernicious anemia can be kept well with parenteral liver therapy. They need little or no iron. Cases of anemia not pernicious are rarely benefited by liver, and waste thousands of dollars each year on expensive proprietary combinations.

Anemias Resulting from Loss of Blood—secondary anemias, with low color index and fighting bone marrow. The commonest causes in order of frequency are (1) menorrhagia and metrorrhagia (fibroid and functional uterine bleeding and carcinoma); (2) gastrointestinal bleeding (peptic

ulcer, ulcerative colitis, bleeding hemorrhoids, polypus, carcinoma of stomach and cecum, hepatic cirrhosis with bleeding varices and intestinal parasitism; (3) urinary-tract bleeding (nephritis, calculus, polypus, malignancy and pyelocystitis); (4) postoperative, post-partum and post-traumatic hemorrhage, and (5) hemorrhage secondary to hemorrhagic blood dyscrasias, such as purpura, chronic obstructive jaundice, leukemia or hemophilia.

In the anemias resulting solely from hemorrhage we find normal or low color index, plenty of platelets, pmns. normal or increased and evidence of bone marrow regeneration.

Treatment: stop the leak and remove the cause of the leak if possible, supply diet rich in blood building properties, transfuse if necessary, administer iron (especially ferrous salts*) and sometimes, in appropriate cases, certain hormones antuitrin S, thyroid, testosterone).

Anemias Resulting from Disturbed Blood Formation—pernicious anemia, chlorotic (idiopathic hypochromic) anemia, sprue, pellagra, colitis, gastritis, polyposis, cirrhosis, aplastic anemia (primary, and secondary to x-ray, benzol etc.), myelophthisic anemia, from bone marrow metastases of malignancy, leukemias and myelosclerotic anemia. The concept of achrestic anemia is merely verbiage for macrocytic anemia of undetermined etiology.

Representative blood pictures in these anemias due to disturbed blood formation are: (1) the macrocytic hyperchromic type—typified by pernicious anemia; (2) microcytic hypochromic anemia of chlorosis; (3) normocytic, leukopenic, thrombocytopenic anemia of aplastic states; and (4) leukemic and leukemoid pictures of the malignant bone marrow diseases. The proper treatment depends upon diagnosis and varies all the way from liver extract for pernicious anemia, ferrous sulphate for chlorosis, and thyroid therapy for myxedema, to x-ray and radioactive phosphorus for leukemia**

Anemias Resulting from Excess Hemolysis (1) Hemolytic Anemias Based on Hereditary Malformation of the Red Cell—(a) hemolitic ictero-anemia; (b) sickle-cell anemia; (c) cooley's anemia. (2) Hemolytic Anemias Due to Bacteria and Protozoa—(a) streptococcus septicemia etc.; (b) malaria. (3) Hemolytic Anemias Due to Chemical Hemolysins—(a) phenylhydrazine; (b) benzol etc. (4) Hemolytic Anemia Due to Allergic and Anaphylactic Factors—(a) drug idiosyncrasy (sulfonamides, quinine arsphenamine etc.); (b) incompatible blood transfusion, serum and snake-bite; (c) pregnancy (hematologically incompatible); (d) paroxysmal hemoglobinuria (coldluetic type); (e) nocturnal paroxysmal hemoglobinuria; (f) favism; (g) Ledere's anemia (?).

The hematological features common to the hemolytic anemias, in addition to anemia itself (macrocytic, microcytic, normocytic or spherocytic) are: Splenomegaly, icterus, urobilinuria and bilirubinemia (but no bilirubinuria), reticulocytosis, hyperplastic bone marrow and in hemolytic ictero-anemia (of familial type) increased fragility of the red cells. In chronic cases there is a strong tendency to gallstone formation. The treatment of these hemolytic anemias ranges all the way from splenectomy for familial icterus, sulfonamide for septicemia and quinine for malaria, to removal of the hemolytic "antigen" if such is present. This may mean cessation of the very drugs just named, such as sulfonamide, quinine, and arsphenamine —removal of an environmental factor to which the patient is sensitized, such as benzol—or, in rare instances, termination of a "toxic" pregnancy. In any case transfusion may be useful and even life-saving, but special care should be exercised in the selection of donors for these patients.

*Copper is not necessary in adult hematological practice.

**Arsenic is useful in chronic myelogenous leukemia but is of no value in the other varieties. Hydrochloric acid is sometimes useful in pernicious anemia and chlorosis.

THE TREATMENT OF BURNS

THE LAST ISSUE of one of our very best medical journals[1] carried an editorial under this caption: "Wanted—A Standardized Treatment for Burns." Here is the answer in abstract.[2]

1. *Illinois Medical Journal*, Sept.

Severe burns endanger the life of the sufferer, and require exercise of all the resources and the determination of the surgeon not only to save life, but to prevent and minimize deformity.

Readers of current medical and surgical journals must be mystified as the protagonists of the varying treatments have their say in the Battle of the Burns. Those aspects of the treatment that have a physiological basis are readily understood. The more detailed discussions on technique appear so contradictory in principle and practice that the reader must be left wondering.

The clinical picture is that of shock unaccompanied by hemorrhage. There is loss of fluid and protein from the circulation with resulting hemoconcentration. Modern methods of resuscitation must be employed. Plasma and other liquids by vein are indicated in most of the severe cases.

The treatment of the burn itself is not so simple.

As a means of treating burns in the Army the tan resulting from the use of the three-dye method is too soft and too easily removed by friction or trauma. The most satisfactory tan is produced by

2. W. A. Hailes, in *Australian & New Zealand Jl. of Surg.*, July.

using alternatively each of two solutions: 10 per cent tannic acid and 10 per cent silver nitrate. One application of each will suffice. This forms an efficient tan, more supple and less traumatizing than that resulting from tannic acid alone.

Efficient treatment implies a general anesthetic, the removal of the clothing, the cutting of all blisters and the removal of all undermined epidermis up to the living edge with dissecting forceps and scissors. The burned area and surroundings are then cleaned with saline swabs; a brush must never be used. Alcohol or ether must be used only to remove grease if that is necessary prior to tanning. It is ideal to place the patient between sterile sheets and leave the burnt areas uncovered; if possible, sling the extremity to keep the tanned area away from the sheets and facilitate drying; posturing is also an assistance. Large tanned areas must not be covered with dressings after tanning. An electric light under the bed cradle helps to keep the cast dry.

When infection or liquefaction is present under the tan, soft areas appear and the fluid gravitates to dependent parts. Once this has occurred, the limb or burn should be immersed in saline solution, the cast should be cut away and the saline bath and vaseline treatment substituted.

The edges of the burnt area after tanning should be painted with 2 per cent gentian violet if available. The same should be done with the creases in the flexure lines. This helps to control infection.

As the time lag (before adequate treatment) *increases*, so the chance of a successful tanning without infection *decreases*. It must be left to the surgeon on the spot, knowing the potentiality of the service immediately behind him, to decide whether (a) to tan the burn and risk the infection in order to conserve body fluid and permit of transportation, or (b) to cover the burn with saline solution or vaseline and send the patient to a burn centre, or (c) even to send him there untreated except for the administration of morphine.

In the great majority of cases in the Middle East, knowing that some of the rules are being broken, the surgeons in the forward areas have realized that tanning and evacuation to a better equipped hospital at the earliest possible opportunity hold most hope of success.

For the granulating surface saline baths, powdered sulphonamide and vaseline dressings are the accepted treatment. The area is by this means very quickly prepared for skin grafting.

It must be realized: (a) that whole thickness burns—third-degree burns—tan badly, if at all, in the areas where the skin is completely destroyed; (b) that infection under the tanned area has brought the tannic-acid treatment into disfavor. Suppuration under the cast results in progressive ulceration and destruction of tissue, with additional loss of skin and the development of scar tissue and subsequent contracture.

SANITY OUT OF THE INSANITY OF WAR

A report from Britain says that care in ambulance driving is more vital than speed and that many injured die because of an inadequate ambulance supply brought about because ambulances were used to carry persons with broken arms or minor injuries.

A textbook published under the auspices of the Medical Department of the U. S. Army lays the hoary and nonsensical teaching that eye-strain (itself a fiction) causes styes.

Another of the same class of textbooks takes cognizance of important knowledge hitherto used only by burglars and gangsters, and advises that men go into action in which they are liable to be shot in the belly with stomach, intestine and bladder as nearly empty as may be.

There's some good in war.

CHRONIC APPENDICITIS.—A few days ago this title arrested our attention, "New Diagnostic Points in Appendicitis." The article was in a high-class surgical journal. Every doctor wants and desires to learn right away all diagnostic points in appendicitis, new and old. But we did not get far before learning that the study was of *"60 consecutive cases of appendicitis: chronic, 37; acute 14;"* subacute, 4; abscess, 3; subsiding, 2. "Sex: *F., 38; M., 22."*

That is not the kind of appendicitis which hurts and kills in this section—of 60 consecutive cases, 37 of them chronic; and 38 of them in women and girls. Sadly, disappointedly, wonderingly we tossed the new diagnostic points into the waste-basket.

ANTERIOR PITUITARY EXTRACT IN THE TREATMENT OF ALLERGY

(C. S. Bucher, Champaign., in *Ill. Med. Jl.*, Sept.)

The method we have found to be the most successful is to administer, subcutaneously, anterior pituitary extract equivalent to 18.5 gr. fresh gland once a week for 7-10 days then three times a week for two or three weeks, or until relief is obtained; then twice a week; later once a week. The average for fairly permanent relief of asthma, hayfever and migrain, and other allergic manifestations, is 25 injections. In havfever patients, the treatment should begin two or three months before the anticipated onset.

Patients sensitive to foods should be put on an elimination diet until symptom free. After two weeks or more of freedom from symptoms, a variety of foods to be added gradually over several months.

Patients who become symptom-free remain so from a few months to as many years. When symptoms return, they usually require much less of the extract, and a shorter period of treatment suffices.

Results in 300 cases: 82 per cent good results, 12 per cent fair results, 6 per cent little or no relief.

NEWS

Dr. Garland M. Harwood has been appointed acting medical director of the Life Insurance Company of Virginia, and will take over the duties of Dr. Ennion S. Williams, who resigned Sept. 3rd as medical director to enter the navy medical corps. Dr. Harwood, a graduate of the University of Richmond and of Johns Hopkins Medical School, has been a practicing physician for 23 years and for the past 12 years has been a member of the company's medical staff.

Dr. D. L. Elder, who has already served as Mayor of Hopewell, Virginia, for twenty consecutive years, has been re-elected for a two-year term. Dr. Elder is a native of High Point, N. C.

Dr. Austin I. Dodson, Richmond, announces the removal of his offices on Tuesday, Sept. 1st, to Suite 409, Medical Arts Building.

The Third Annual Medical Meeting of the National Foundation for Infantile Paralysis will be held in New York City Dec. 3rd and 4th.

Medical College of the State of South Carolina

Dr. Rhett G. Harris, instructor in Bacteriology, resigned to join the armed forces as First Lieutenant in the Sanitary Corps. He is now stationed at Jefferson Barracks, Mo. Dr. Raymond M. Young replaces Dr. Harris.

Dr. Robert Walton, formerly a member of the faculty of the medical college of the University of Mississippi, has been elected professor of pharmacy to succeed Dr. W. H. Zeigler, who died during the summer.

Dr. John Arthur Siegling, orthopedic surgeon, after several years' residence in Illinois where he was in charge of the department of bone and joint surgery at the Carle Clinic at Urbana, has returned to Charleston to practice He will be on the faculty of the medical college in orthopedic surgery.

Dr. L. T. Belkin, formerly of the Yale University School of Medicine, has been appointed as an instructor in the school of pharmacy, and Dr. W. G. Sink, formerly of the faculty of the Citadel, has been appointed to the chemistry department of the medical college.

The 49th session of the School of Pharmacy opened Oct. 5th. Dr. William A. Prout has been named acting director of the school and will continue as proefssor of operative pharmacy. He announced that whereas, formerly, the first-year students were trained at the medical college, now the plans call for all four years' training at the school of pharmacy.

University of Virginia

Dr. H. B. Mulholland and Dr. Alfred Chanutin attended a four-day course of lectures and demonstrations in Chemical Warfare given in August under the auspices of the office of Civilian Defense and the Chemical Warfare Service at Edgewood Arsenal, Maryland.

Dr. J. Edwin Wood addressed the James Rue Medical Society in Crottsville, Virginia, on July 15th. He discussed the use of certain drugs in heart disease.

On September 2nd, Dr. W. E. Baker spoke before the University of Virginia Medical Society on the subject of Syphilis.

The following changes have occurred in the Medical Faculty of the University of Virginia, effective July 1st, 1942:

Dr. H. B. Mulholland has been appointed Assistant Dean

Dr. Samuel Alexander Vest has been promoted from Associate Professor to Professor of Urology

Dr. Lawrence T. Royster resigned as Professor of Pediatrics

Dr. Robert Bennett Bean retired as Professor of Anatomy.

MARRIED

Dr. William Minor Deyerle, of Bluefield, West Virginia, and Miss Frances Mozelle Hood ,of Richmond, were married on September 12th.

Dr. John Paul Jones and Miss Elizabeth Hyman Adkins, both of Richmond, were married on September 12th. Dr. Jones is an officer of the Medical Corps, United States Naval Reserve, stationed at Bethesda, Maryland.

Dr. Robert Blackwell Smith, Jr., of Petersburg, and Miss Esther Ostern, of Madison, Wisconsin, were married on September 6th.

DIED

Dr. Hughes B. Hoyle, 71, died unexpectedly at his home at Manteo, N .C., September 7th. He had practiced medicine and taken an active part in all the affairs of the town of Manteo and the County of Dare for a quarter century.

Dr. Joseph H. Winfrey, 70, of Glen Allen, Va., died at a Richmond hospital September 7th.

Commander Julian Taylor Miller, 71, retired, died Septembebr 21st at Portsmouth, Va. Burial was in Arlington National Cemetery. Commander Miller was born at Alexandria, Va., Oct. 18th, 1871, and was graduated from the University of Virginia Medical School.

Dr. Robert Bagley Cralle, Jr., aged 39, who formerly practiced at Drakes Branch, Virginia, died at his home in Farmville on September 27th.

NEW TYPE OF STRETCHER

(London Corresp., in *Jl. A. M. A., Sept.* 19th)

The ministry of war transport has issued a description of a new type of stretcher (the Neil Robertson) for moving the wounded from places where the ordinary stretcher would be useless. The patient, in a protective but flexible case wrapped like a mummy, may be hoisted vertically or carried horizontally. The stretcher can be bent in turning sharp corners. It is made of stout canvas 65 inches long, stiffened by bamboo slats sewn to the canvas.

Since a negative skin test precludes the possibility of intravenous plasma shock, Levine and State recommend that whenever possible a pretransfusion dermal test should be used for selection of a nonreacting plasma.—Edi. in *Jl. A. M. A.*, Sept. 19th.

Typhus.—The first account we have of this disease in the New World was written by Francisco Bravo and published in Mexico City in 1570—thirty-seven years before the settlement was made at Jamestown.—*Roche Review.*



* Sodium Alurate Tablets is the new oral form of the reliable sedative-hypnotic known to the medical profession as Alurate 'Roche' Supplied in 1¾ gr. and 3½ gr. tablets; bottles of 25, 100, and 500 . . . HOFFMANN-LA ROCHE, INC., NUTLEY, N. J.

BOOKS

ROENTGEN TREATMENT OF DISEASES OF THE NERVOUS SYSTEM, by Cornelius G. Dyke, M.D., F.A.C.R., Associate Professor of Radiology, College of Physicians and Surgeons, Columbia University; Director, Department of Radiology, Neurological Institute of New York; and Leo M. Davidoff, M.D., F.A.C.S., Chief, Department of Surgery, Attending Neurological Surgeon, Jewish Hospital of Brooklyn. Octavo, 198 pages, illustrated with 12 engravings, 7 charts and 16 graphs. *Lea & Febiger,* Washington Square, Philadelphia. Cloth, $3.25 net. Published September, 1942.

In the last decade radiotherapy has, to a large extent, taken the place of surgery in the treatment of pituitary adenomas. Improvements in apparatus and in knowledge of pathological changes in the nervous system have enlarged the usefulness of x-rays in this field. Many conditions heretofore regarded as hopeless of cure have proved amenable to Röntgen-ray treatment. A summary is given of the literature in English on the subject.

The book is made up of factual statements of matter of great interest to neurologists, radiologists, surgeons and general practitioners.

CLINICAL ANESTHESIA, by John S. Lundy, B.A., M.D., Head of Section on Anesthesia, Mayo Clinic; Professor of Anesthesia, Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota; Diplomate and Member of the American Board of Anesthesiology, Inc.; Member of the Subcommittee on Anesthesia, National Research Council. 771 pages with 266 illustrations. *W. B. Saunders Company,* Philadelphia and London, 1942. Price $9.00.

In a foreword written shortly before his death, W. J. Mayo pays a high tribute to the author and his work, and says there have recently appeared many substances which have increased the efficiency of anesthesia, decreased the dangers, and added so greatly to the comfort of the patient as almost to revolutionize surgical anesthesia.

Records of 1200 particularly instructive cases make their contribution to the book.

Chapter heads are:

Choice of Agents and Methods, Anesthesia by Use of Local Agents; Methods of Local and Regional Anesthesia; Spinal Anesthesia in General; Technic of Spinal Puncture and of Single-dose Spinal Anesthesia; Instructions to Physicians, Dentists, Nurses and Assistants—Equipment and Drugs Used; A Preliminary Consideration of General anesthesia; Stages and Signs of General Anesthesia; Care and Medication Preliminary to Operation under General Anesthesia; Care and Medication Subsequent to General Anesthesia and Operation; Volatile Agents used in General Anesthesia; Gases used for General Anesthesia; Gases

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★

**The Military Surgeon, Vol. 89, No. 1, p. 5, July, 1941*
J.A.M.A., 93:1110—October 12, 1929
Brückner, H.—Die Biochemie des Tabaks, 1936

★

"THE CIGARETTE, THE SOLDIER, AND THE PHYSICIAN," The Military Surgeon, July, 1941. Reprint available. Write Camel Cigarettes, Medical Relations Division, 1 Pershing Square, New York City.

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used for Respiratory Support; Intratracheal or Endotracheal Anesthesia; Intrapharyngeal Anesthesia; General Anesthesia in Dentistry; Inhalation Anesthesia in Obstetrics; Intravenous Anesthesia; Rectal or Oral Instillation; Balanced Anesthesia; Anesthesia for Nonsurgical Conditions; Venipuncture; Intravenous Therapy; Resuscitation Records and Statistics; Analysis of Experience for 1924-1940; Efficacy and Toxicity of Local Anesthetics; Chemistry of Analgesics and General Anesthetics; Chronology.

All of these many aspects of the subject being covered in the most ample manner, makes of this book the last word on clinical anesthesia.

MILITARY SURGICAL MANUALS. VOLUME II. OPHTHALMOLOGY and OTOLARYNOLOGY, prepared and edited by the Subcommittee on Ophthalmology and Otolaryngology of the Committee on Surgery of the Division of Medical Sciences of the National Research Council. 331 pages with 124 illustrations. *W .B. Saunders Company*, 1942. Price $4.00.

This volume is one of a series developed under the direction of the Division of Mental Sciences of the National Research Council for the use of the U. S. Army and Navy.

Under Opththalmology:

Functional Testing; Examination of Eye; Acute Visual Disturbances; Acute Inflammations of Eye; Injuries of Eye; Medical Treatment; Local Anesthesia About the Orbit; Surgical Procedures.

Under Otolaryngology:

Primary Treatment of Gunshot Wounds of the Face; The Ear in General; Fractures of the Temporal Bone and of the Cribiform Plate; Injuries to the Labyrinth and Labyrinthine Function; Group Testing of Hearing; Malingering; Roentgenologic diagnosis of Petrositis; The Ear in Military Aviation; Reëducation of the Deafened Soldier; Reeducation for Speech Defects; The Nose and Throat in General; Paralysis in Connection With Wounds of the Throat; Infections of the Throat; Chemotherapy; Injuries of the Esophagus; Injuries of the Larynx, Hyoid Bone, and Trachea.

Both the divisions are intended for the use of non-specialists, and well are they presented.

MILITARY SURGICAL MANUALS VOLUME III. ABDOMINAL AND GENITO-URINARY INJURIES, prepared under the same auspices. 243 pages with 79 illustrations. *W. B. Saunders Company*, Philadelphia and London, 1942. Price $3.00.

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Every doctor in general practice should buy and use daily this book of condensed information of subjects with which we are daily concerned.

CINEPLASTIC OPERATIONS ON STUMPS OF THE UPPER EXTREMITY, by RUDOLF NISSEN, M.D., New York, and ERNST BERGMANN, M.D., New York. *Grune & Stratton*, 443 Fourth Avenue, New York, 1942. $3.75.

The authors use the word cinetization to mean best utilization of the muscular potential remaining in the stump. The muscles concerned in any movement are classified as protagonists, antagonists, synergistists and coöperatives—all which must be taken into consideration in planning the amputotion in order to obtain best results.

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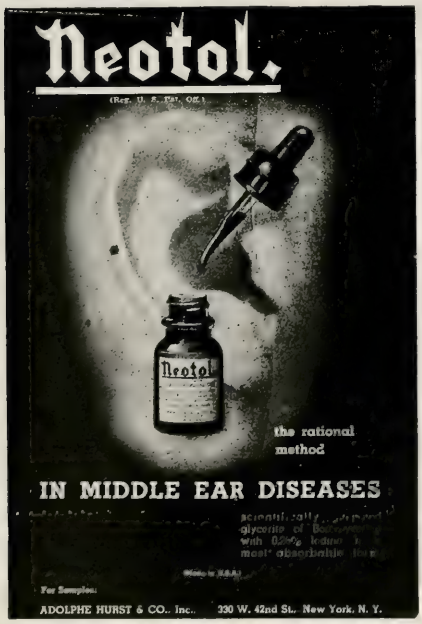
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OF INTEREST TO DOCTORS

FRED H. ALBEE, M.D., International President of the International College of Surgeons, is on a goodwill trip in South America. During his trip he will dedicate the operating-room, to be named for him, of the new Medical College of the University of Buenos Aires, will address the Brazilian National Orthopedic Association and will lecture at the University of Chile, of whose faculty he is an honorary member. On his return, he will report to the Rehabilitatiton Commission of New Jersey, of which he has been a member for the past 24 years, on the rehabilitation work done by the Commission in the South American countries he will visit.

LEONARD G. ROWNTREE, M.D., Colonel, M. R. U. S. Army, Medical Division, in an article on "Rehabilitation and Prehabilitation" appearing in the A. M. A. Journal recently, stated: "The American Flying Service Foundation, New York City, under the leadership of Dr. S. M. Strong, has limited its activities to the rehabilitation of men for service with the air force. Through the coöperation of doctors and dentists, largely on a voluntary basis, some 2,700 have been given appropriate guidance and 700 cases have accepted surgery to date, without fatality or serious complications. Over 90 per cent of those rehabilitated have been accepted for military service."

THE MEDICAL DEPARTMENT of E. R. Squibbs & Sons of New York City has just issued *The Physicians' Reference Book of Emergency Medical Service,* a compilation chiefly from medical literature, presenting the practical experience and lessons from handling civilian war casualties. Many quotations are from British medical journals. The book has been compiled, printed and distributed as a public service to physicians and surgeons in the Emergency Medical Service of the United States of America.

A SURVEY OF MEDICAL INSTITUTIONS in the metropolitan area (this includes all the five boroughs known as Greater New York City), show there are 800 institutions and agencies in the metropolitan area concerned with the care of the sick. Of these, 369 organizations are hospitals, of which 200, with 49,000 beds and a property valuation of $379,000,000, are located in Manhattan. Perhaps three-quarters of these houses of healing are general, accepting all types of patients. About one-half are non-profit organizations supported by patients' fees, endowments, and contributions so that they are listed as *voluntary*. A few are private and operated for profit. Others, such as Gouverneur, Metropolitan, Harlem and Bellevue, are under the city's jurisdiction, and still others belong to the Federal Government. Practically all of them maintain ambulances. These number 116, of which, during normal times, each makes approximately 3,000 calls a year.

(Continued on page 605)

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SULFONAMIDE CONTRAINDICATIONS.—In cases of nephritis or poor kidney function from any cause, the sulfonamides are contraindicated. However, if the need for this drug be urgent, small doses (20-30 grains per day) may be given, watching carefully for dizziness, headache, reduction in the urinary output, etc. Alkalis and liberal doses of vitamin B complex given along with the drug seem to increase tolerance. Methylene blue, administered either intravenously or by mouth, is reported to be the antidote for the toxemias of sulfanilamide. This drug should not be recommended to patients with serious gallbladder or liver disease.—I. G. Duncan, Memphis, in *Jl. Tenn. Med. Assn.*, Sept.

DUODENAL ULCER is primarily a medical disease. Only in the presence of certain complicating conditions is surgical treatment indicated. It seems likely, as time goes on and more is learned of such substances as urogastrone and enterogastrone that medical management will become increasingly more effective. In our experience during the past five years 83-88 per cent of all patients with duodenal ulcer have received medical treatment, and the remainder have undergone operation.—J. T. Priestley, Rochester, Minn., in *Jl. Iowa State Med. Soc.*, Sept.

RELATION OF VITAMIN B COMPLEX TO HUMAN DISEASE

(T. M. Rivers, Kissimmee, in *Jl. Fla. Med. Assn.*, Sept.)

Symptoms of deficiency well developed are readily recognized, but the diagnosis is difficult. The habits of the patient, the symptoms, urinalysis and elimination of other possible causes must be attended to. Important is the tendency of deficiency of the B vitamins to produce symmetric manifestations; a symptom of one deficiency of the B complex usually indicates deficiency of other members of the complex.

Inquire carefully as to the diet. In case of anemia, general weakness, anorexia, neuritis, retarded growth, lesions of the skin, keratitis, cheilitis, stomatitis, gastroenteritis or cramps, one may well suspect a deficiency of one or more of the B vitamins; some other disease entity may be masked in the symptoms of vitamin deficiency and thus be overlooked.

Many difficulties are encountered in trying to treat these deficiencies; persons want immediate relief; dietary change approaches the impossible in many cases. The lover of sweets refuses to give up his candy and pop. The alcoholic refuses to abstain from his drink. The factory worker continues ot have his sandwiches and his beer, and the old lady living alone refuses to vary from her toast and tea.

The high cost of the concentrates prevents many from taking them in quantities sufficient for the best results.

It is well to correct the deficiency indicated by aggressive treatment and to reinforce the doses of the needed vitamin with smaller doses of the other constituents of this complex.

CANCER IN CHILDHOOD

(Max Ritvo, et al, Boston, in *Radiology*, Sept.)

Of the 153,846 persons who died of cancer in the United States in 1939, 1,103 (0.7%) were less than 15 years old. In Massachusetts in 1939, the death rate for cancer in childhood was greater than for pertussis, measles, diabetes, cerebrospinal meningitis, syphilis, scarlet fever, or typhoid: the only disease which had higher death rates were influenza, diseases of the nervous system, appendicitis, the enteric diseases and pneumonia.

All malignant neoplasms in children from birth through 15 years of age observed at the Boston City Hospital 1915-1939, a total of 72 cases: intracranial neoplasms 23; kidney 13; 11 cases of Hodgkin's disease; 27 of leukemia. The commonest tumors were glioma, Wilms' tumor, osteogenic and Ewing's sarcoma, and miscellaneous soft-tissue sarcomas. There were three carcinomas of the adult type.

PROBLEMS OF BEHAVIOR IN CHILD GUIDANCE

(H. J. Binder, Oklahoma City, in *Jl. Okla. State Med. Assn.*, Aug.)

Even though it is true that problems of children usually are indicative of problem parents, I regret to see this latter term obtaining such wide circulation among the laity. The ultimate effect is to be feared. It makes it more difficult for a parent to seek help for the child since the term infers blame of parents and creates a defensive attitude on the part of many parents. There is no place for blame or fault-finding in any treatment relationship with parent and child. Just as we have grown more understanding of the child with a problem and have progressed to the point of seeking an explanation for misbehavior, so should we begin to understand the difficulties besetting the parent. Scolding the parent is as destructive as scolding the child. Treatment for both is necessary through a tactful approach, with encouragement to the parent that he or she has done the best within his or her power under the circumstances.

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SUBLUXATION OF DISTAL END OF ULNA

(C. W. Ruhlin, Bangor, in *Jl. Maine Med. Assn.*, Sept.)

Subluxation of the distal end of the ulna is to be considered as a possible complication of fractures and dislocations about the wrist joint. A small number of these subluxations which produce symptoms and disability; then relief is sought for pain and loss of function, or for cosmetic reasons.

Trauma forceful enough to fracture or dislocate the distal end of the radius is sufficient to dislocate the distal end of the ulna. From the outstretched hand the force is transmitted through the carpal bones to the distal end of the radius, which is fractured with a posterior displacement of the lower fragment; also in forceful supination lateral force may rupture the ulnar attachment of the triangular ligament. This fracture allows the wrist to widen, which, in turn, ruptures the anterior and posterior ulno-radial ligaments.

Arthritis may produce a relaxation of the ligamentous structures which undergo a degenerative change of the distal end of the ulna and the production of exostosis.

The deformity may be brought about by a series of minor traumata over a long period of time.

All nine of the reported cases were treated by a conservative regimen by the use of a leather wristlet. Four came to open operation; four distinct techniques were used. In three cases, a fascial strip was used. In one, Gallie's technique was used, with a resulting pseudo-arthrosis, and had to be operated on the second time. This case ended in a good result.

All four cases reported a relief of pain. Two had a slight subluxation of the distal end of the ulna; all a good functioning joint.

NORTH CAROLINA'S CATTLE NOW PRACTICALLY FREE OF BANG'S DISEASE

North Carolina is the first state to be officially designated as a modified accredited Bang's disease-free area. The release from the U .S. Department of Agriculture says that, at the time of the report, July 6th, there were twenty-eight counties in the country entitled to this classification ten of which were in North Carolina, the others divided among eleven states.

SAYS AMPHETAMINE SULFATE AIDS IN TREATING ALCOHOL ADDICTS

(M. E. Miller, Lexington, Ky., in *Jl. A. M. A., Sept. 26th*)

In a study of 513 chronic alcoholic addicts who were treated with amphetamine sulfate, psychotherapy and social reorientation and rehabilitation, amphetamine sulfate proved to be of considerable value.

Comparison of 167 ambulatory patients who had been observed for a nine-month period with an equal control group of untreated subjects revealed that 25 per cent of the treated group as compared with 42 per cent of the control group were rearrested.

Conference on Venereal Disease Control Needs in Wartime

Venereal disease and America's war effort will be discussed by high-ranking medical officers of the War and the Navy Departments, prominent physicians, health officers and others at a conference in Hot Springs National Park, Arkansas, October 21st-24th, 1942. Headquarters will be at the Arlington Hotel.

The conference will be held under the auspices of the United States Public Health Service in conjunction with the Eighth Annual Meeting of the American Neisserian Medical Society. State and local health officers, veneral disease control officers, practicing physicians, and all others engaged in veneral disease control activities are urged to attend.

Subjects for discussion will include veneral disease control measures influencing the war effort, epidemiology of syphilis and gonorrhea—1942, wartime venereal disease control education, research influencing the wartime veneral disease control program, and technics of venereal disease education.

Governmental, professional and health organizations to be represented at the conference include: the War Department, the Navy Department, the Social Protection Section of the Office of Defense Health and Welfare Services, the American Medical Association, the American Neisserian Medical Society, the American Social Hygiene Association, State and local health departments, and the United States Public Health Service.

The effectiveness of surgical debridement in controlling the development and spread of *gas gangrene* has again been emphasized in these experiments. Zinc peroxide as a local dressing in a severely contaminated wound has an inhibitory action upon the progress of gas gangrene. The immediate implantation of one of the sulfonamide drugs will in the experimental animal inhibit the development of gas gangrene in most instances.—F. J. Cox, New Orleans, in *Sod. Med. Jl.*, Sept.

Fluid given by vein should not be in excess of 5 per cent of the body weight and the rate should be 5 to 10 cc.. per min. Into the peritoneal cavity 40 to 50 c.c. for each pound the patient weighs, may be introduced in 10 to 20 min. In using the peritoneal injection insert the needle through the left rectus muscle if the patient is a very young infant. In children and adults, be sure the bladder is empty, then introduce the needle below umbilicus in the midline.

Of Interest to Doctors

(Continued from page 603)

DAVID B. SHULMAN, M.D., Medical Director of the Benjamin Franklin Health Service, Inc., of New York City, in an article "There'll Always Be the Family Doctor," stated: "Medicine today presents three aspects: the Curative, the Preventive and the Perfective.

This last aspect is relatively new, for today medicine is pointed primarily at that positive state of well being known as Health, rather than the curing of disease. This is a natural development, since patients first sought the attention of doctors for the relief or cure of disease and it was therefore this study of disease which led the physicians into the field of Preventive Medicine."

The Benjamin Franklin Health Service is a new arrival in the field of coöperative medicine. More than 750 doctors have enrolled in the plan. A participating doctor receives $5.00 for each subscriber he attends. There is a higher fee for specialists, a surgery fee of $50.00 paid by the subscriber and a $30.00 fee for obstetrical services. The entire plan, in reprint form, may be had on inquiry from Dr. Shulman, 383 Madison Avenue, New York City.

IRVING VORHEES, M.D., recently certified twelve boys to the American Flying Service Foundation, and through that organization to the United States Air Corps. Dr. Vorhees is a rhinologist. Examination of nasal obstructions showed that deviated septum is the commonest defect. This can be corrected and the candidate can be certified to the Air Corps in about two or three weeks. However, *sinusitis* with *postnasal* discharge can seldom be cured in a few treatments, and extensive operations would also bar the applicant. Aural conditions, deafness even though moderate, and chronic discharging ears are not amenable to cure from a flying point of view.

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JAMES M. NORTHINGTON, M.D., Editor

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War Neuroses*

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THERE has been a great deal of discussion of late about War Neuroses, or nervous conditions brought about by the war. Confusion and misinformation about this subject has certainly existed in the past, and a general discussion of the problem may clarify any that still exists.

In the World War cases of exhaustion neurosis, shell shock, concussion neurosis, anxiety states and neurocirculatory asthenia were all included under the heading War Neuroses. The symptoms varied greatly and consisted of tremors, inability to stand or walk, blindness, paralysis, stammering, loss of voice etc. Many soldiers complained of weakness with fatigue brought on by the slightest exertion; palpitation of the heart, dizziness or faintness; headache, or pains referable to practically every part of the body. The occurrence of such large numbers of these cases suggested a specific relationship between these conditions and war, and led to the naming of these conditions war neuroses.

The London correspondent of the *Journal of the American Medical Association* wrote in February, 1940:[1] "During the last war, the large number of neuroses brought on by fear, shock, physical and mental strain or lack of sleep caught the medical officers of the Army unprepared with any organization or agreed method of treatment. These neuroses were popularly called shell shock, for it was supposed that they were due to the physical effects of high explosives. But it was found that similar symptoms occurred among men who had never been exposed to explosives and that they were well known to be manifested by persons in civil life. Moreover, many men who were blown up or buried beneath debris to the same extent returned to duty without suffering any permanent ill effects.

In 1920 the army council appointed a committee to collate the medical experience of the war for future use. The committee reported: 1. The term shell shock has been a gross and costly misnomer and should be eliminated. It is a catchword which reacts unfavorably on the patient and others. 2. The war produced no new nervous disorders. Only 5 to 10 per cent of the cases that were called shell shock suffered from genuine concussion—while 80 per cent consisted of emotional shock."

Many men now in training in army camps are entering hospitals with nervous disorders. These cases might be called shell shock, if they started during a bombardment and were seen by physicians who were not familiar with the condition.

In a vast majority of cases of neuroses being admitted to the hospital at Fort Bragg, a history of long-standing nervousness can be obtained. Many of these individuals frankly admit that they are no worse for being in the army—that they "have always been that way." I have no statistics, but it is rare to find an individual whose nervous trouble began after enlistment or induction into the army.

*Presented at a meeting of the Fifth District Medical Society of North Carolina at Station Hospital, Fort Bragg, N. C., Oct. 1st, 1942.

If the reaction, then, is not specific for war, it becomes necessary to explain the appearance of such large numbers of cases. It is important to consider first the question of predisposition to neurotic disorders. Individuals vary markedly in their abilities to tolerate difficult situations, as they do in adjusting to new situations. Some people always worry, while others are not phased by the greatest tragedy. It is understandable, that a hypersensitive, excessively irritable, impulsive, self-centered, infantile and moody person can "take less" than a well adjusted mature individual—and will decompensate sooner when exposed to the same stresses and strains.

The symptoms which the patients develop under stress of training or combat are assumed unconsciously. They serve a purpose and are defense reactions to danger. The vast majority of such persons are not malingerers. Just because these soldiers have a sense of duty, esprit de corps and patriotism, and cannot honorably or safely run away from combat, they develop the unconscious conflicts and consequent symptom formation. The symptoms are for the most part hysterical. They are the result of a conflict between the instinct of self preservation and the ideas of duty and self respect. They satisfy the patient's ethical requirements and provide an escape from duty on the ground of physical incapacity.[2]

In examining the deeper psychology of the neurotic patient of the war, it was frequently found that many men stuck patiently to their duties; but, after a time, as the result of repeated provocation, they broke down under the strain. The controlling force, the better self, was no longer able to stand up against the insistent demands of an instinct which demanded either an escape from danger or an aggressive outburst. Where the natural self could find a way out, the soldier was able to solve his conflict by a variety of means, sometimes not laudable from the standpoint of morale—by reporting sick, getting around a N. C. O. for a soft job; or even courting the prospect of a slight wound which would allow a man to return home with mental peace and the semblance of honor. But this act could not easily be practiced, and instead, when the bursting point was reached, hysterical reactions appeared. This was Nature's way of obtaining some measure of adaptation, an adaptation which is in the nature of a compromise between instinct on one hand and conscience on the other.[3]

"In cases of hysteria which had lasted some time and were not cured immediately by the rough justice of disciplinary action or the tactful action of a wise medical officer, the reaction to war danger and stress became linked up with other conflicts in the mind which existed before the period of war service. It, therefore, did not take much time for the neurotic reactions to the war to weave themselves into the preëxisting neurotic disposition which had grown up in peace time."[3]

It was for this reason that one English physician came to the conclusion that the cure of the hysteria of the war became in a large measure the resolution of mental problems of peace time. Many victims of war-time neurosis, particularly those who broke down early, were found on deep analysis to be associated with long-standing feelings of insecurity. Such men were found to have spent their lives either in sheltered places, or had family ties which had thrown the responsibility for security not upon them, but upon their parents.[3]

A clinical survey of the first group of invalid soldiers to be returned to Australia from abroad in this war reveals some interesting facts. Of 208 cases studied, 61 were due to diseases of or injury to the nervous system. A great majority of the patients suffering from anxiety states gave a history of previous nervousness or breakdowns. Careful inquiry into the past histories of these patients showed that they were capable of carrying on in civil life in spite of minor breakdowns; but the strain of military life in active service quickly revealed their mental instability. A large number might have been excluded from the army, if a truthful history had been given in the first place.[4]

A report was published of 200 consecutive neuropsychiatric admissions to the Christie Street Hospital in Canada in the year from October, 1939, to September, 1940. In investigating environmental and hereditary factors it was found that in over 50 per cent the physical and mental health and economic status of the families were classified as poor or bad. Only 68 per cent showed both parents alive when the patient reached the age of 14. In eleven cases parents were separated, seven were brought up in an orphanage, two had been adopted and two were illegitimate.

Thirty-two were illiterate and one hundred did not pass examinations on leaving public school; 60 per cent had no trade; 51 per cent had had long periods of unemployment, no settled occupation, or required assistance from the family or authorities; 17 per cent had been in difficulty with the police for vagrancy, drunkenness, theft or assault. Twenty-two were backward, and eight had attended special school for backward children. Eighteen gave a definite history of a previous psychotic episode, seven had been patients in mental institutions. Thirty-five had required attention for neurotic disorders prior to enlistment.

In only twenty-six were strain, change of surroundings, alteration of diet, separation from families etc. considered significant with regard to appearance of symptoms. None of these was defi-

nitely associated with war strain.[5]

"Many things were learned quickly in the war of 1914 to 1918. Although many physical disabilities could be waived, and although many of them disappeared with treatment or favorable conditions of military training, it was usually the opposite in cases of nervous or mental diseases. Such men were only too often singled out only after a considerable period of training, during which time they received pay, equipment and maintenance, wasted the time of the instructors, interfered with training and filled hospital beds urgently needed for others. Many of them would have been better off to all concerned, if not even of material assistance to their country, had they been left in their accustomed surroundings. If they became soldiers, they were almost certain to present eventually a serious economic problem to the nation in the form of government hospitalization."[6]

In the war of 1914 to 1918, officers complained that if specialists did not cease eliminating the mentally unfit, there would be no army left. Recommendations for rejection or discharge were often waived by line officers. Eventually, it was discovered that the nervous and mentally unfit were greatly embarrassing the American Expeditionary Forces. On July 15th, 1918, General Pershing urgently cabled the Chief of Staff that more intensive effort be made to eliminate such men. After this, rejections and discharges were carried through with less difficulty.[62]

"It was said that no other class of men made for so much mischief in the United States Army as did the feebleminded. Their records prove that physical health, strength and ability to get along in civil life did not, in themselves, insure satisfactory army service. The strange and exacting environment of the army was too much for them."[63]

Newspaper stories demonstrated how undesirable psychopaths were given the opportunity to enter the armed forces instead of serving prison sentences. They were only to get into further difficulty when in uniform.

"Eventually it evolved that from April, 1917, to December, 1919, 95,577 officers and men (both Army and Navy) were admitted to hospitals for mental disease in this country and abroad, and 41,976 were discharged for disability incidental to mental disorders in the same period.[64] Also, of 54,117 ex-members of military service hospitalized by the Veterans' Administration, approximately 60 per cent were hospitalized because of neuropsychiatric disabilities, and cost the government almost $1,000,000,000 in the past fifteen years.[64] Even with the exclusion of paresis, mental deficiency, psychopathic personality and chronic alcoholism, two out of five veterans receive pensions because of neuropsychiatric disability."[65]

Similarly in the British Army, statistics from the last war showed that one-third of the unwounded, and one-seventh of those discharged, were permanently unfit because of functional neuroses and mental disorders.

The major factor in the prevention of war neuroses is the detection and early rejection or elimination of the emotionally unstable from active combat service. This can be done if there is a greater awareness of the problem in medical circles.

Too often, individuals who have been maladjusted in their communities for one of many reasons are only too eagerly pressed on into army service, where the promise of their making an adjustment is even less than in civilian life. In attempting to get rid of such non-productive persons, communities often are misguided, because frequently these same individuals are returned home after only brief residence in the army in worse condition than when they left, and due to no fault of the army.

Just consider the confirmed psychoneurotic who is inducted. He is taken away from a sheltered home environment and sent to an army post where he is immediately subjected to discipline, to a mass of strangers who at first may not be too friendly or tolerant of his shortcomings, and made to face a complete unknown. Already conditioned to meeting and solving his difficulties in an immature fashion, his symptoms usually become more pronounced and he starts on the path from barracks to dispensary to hospital.

The task of the doctor in the army is to preserve fighting strength and there is almost always some resistance to recommending discharge for any one who has no serious organic disease. It is not until the individual has proven his worthlessness that proceedings are instituted to send him home. By that time he has too often been branded a goldbricker; he has developed hospitalitis; his symptoms have become fixed; his self-confidence is undermined; he is torn between a sense of patriotism and self-preservation, and he returns home a more serious problem to his community or family. In many cases he must preserve his illness to save face among his friends.

However, the lesson of the World War was well learned and it is significant that the Surgeon General has requested that medical officers examining applicants for the army be especially alert to detect all those with any mental or nervous abnormalities, who later may disrupt discipline and morale, or occupy hospital beds urgently needed for acutely ill patients.

Greater attention should be paid to the following statement of the Surgeon General: "The Army is in no sense a social service or a curative agency.

It is to be considered neither a haven of rest for wanderers nor a corrective school for misfits, ne'er-do-wells, feebleminded persons or chronic offenders. Furthermore, it is neither a gymnasium for the training and development of the undernourished or undeveloped nor a psychiatric clinic for proper adjustment to adult emotional development. Therefore, there is no place within the Army for physical or mental weaklings, potentially psychotic or prepsychotic persons or behavior problems. Men who present behavior problems in the civilian community will certainly present intensified problems in the service."[8]

NEUROSES IN CIVILIAN POPULATIONS

With regard to the problem of war neuroses in civilian populations, the general experience in Britain is that an exaggerated estimate had been formed of the liability of war to produce nervous breakdowns. As a result of the intense air raids on Britain, few nervous breakdowns occurred in spite of the suffering and material loss.[9]

The best remedy against panic and disruption for civilian populations lies in the active participation of as large a section of the population as possible. A lesson is to be learned from the Germans, who state there are no shoemakers in Germany any more, they are all fighters on the shoemaking front. Democracy too often leads to an attitude of—what do I get?, with a disregard of—what can I give?

Aggressive impulses of the people should be mobilized along certain definite channels. Each individual as far as possible should be given an active part to play. Training in first aid, instruction in modern methods of warfare, in the nature and effects of high explosives and gasses should not be kept as a mystery from the average citizen. He should also be taught the importance of the so-called fifth column in modern war and what measures are necessary to counteract it. Another error has been an excessive concentration of the public mind on safety first. There has been far too much talk of where to hide and how to protect one's own skin, of keeping up the morale of the nation, and of preventing panic. There has been too little talk of how to defeat the enemy. People were getting the feeling that one had only to sit and wait long enough for the enemy to be defeated without personal danger. This was the philosophy of the Maginot Line and it was a psychological disaster. It led to the feeling that we had only to produce enough machines, enough concrete and enough airplanes and to pour out enough money to win the war.[10]

Safety first, must give way to service first.

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MANAGEMENT OF LYMPHEDEMA

(W. C. Beck, Chicago, in *Ill. Med. Soc.*, May)

The idiopathic case and old long-standing thrombophlebitic edema, if mild, treat by medication and diet. Ammonium chloride in large amounts if tolerated and other diuretics, also a high-protein low-salt diet. Having the patient sleep with the foot of the bed elevated six inches will often afford complete relief. Massage—a stroking type only—with great care in order to avoid stirring up a latent phlebitis or lymphangitis, toward the root of the extremity. Bandages and elastic stockings and gloves at first are worn constantly; later only part of the day.

The use of the Pavex boot is proscribed; intermittent venous compression limited to 40 mgms. used with extreme caution.

In moderately advanced cases strips of celloidin are pushed into the tissues with 8-inch forceps from the normal into the edematous area, left in place from four to six weeks. Strips are 10 inches in length, four to six for each extremity, and the entire incision for the procedure is only one-half inch long. When strip is removed one observes a tract with appearance of a tendon sheath which is full of thin lymph.

Advanced cases require extensive resection of skin and subcutaneous tissues including the fascial muscular sheaths over three-fourths of the circumference of the extremity, utilizing the original skin for a large part of the repair. Keep patient in bed with the foot of the bed elevated for at least two weeks before the operation. A high blood sulfanilamide level is built up at this time as a prophylactic measure. Blood is prepared for transfusion, and the operation is carried out in stages; if the extremity is tremendous, in four to five sessions.

Cerebral Palsy and the Electroencephalogram

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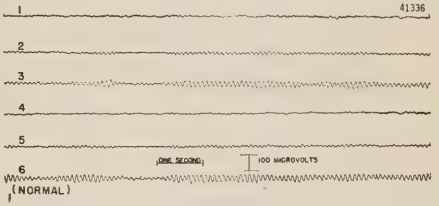
IN THIS STUDY we tried to determine the value of the electroencephalogram as a refinement in diagnosis and prognosis in the cases of children with cerebral birth injury and the congenital abiotrophic and degenerative palsies. To be contributory, such electroencephalographic interpretation would have to give information that is otherwise less readily obtainable. In the cases studied we attempted to evaluate the following points from the electroencephalogram:

1. Localization and extent of lesion
2. The intelligence potential
3. Susceptibility to convulsions.

After an independent conclusion had been reached, the electroencephalogram reports were compared with the clinical findings as evaluated by the orthopedic surgeons.[1] An estimate of the mental capacity of each subject was made by means of accomplishment in school, psychometric tests and progress while under training at the cerebral palsy clinic. To be able to offer prognosis regarding the tendency to convulsions would be important as some institutions for the care of feeble-minded or handicapped persons refuse admission on this score.

The electroencephalogram gives a record, for the most part, of cortical electrical activity. Pathological processes below the cortex can sometimes be detected by means of the disturbances they produce in the cortical activity. Thus expanding and growing subcortical processes may be localized by studying the "secondary" changes of the cortical activity that result from the effects of mechanical pressure, the irritation of infiltrations or of cicatricial tissue of mesodermal origin.[2] Degenerative changes beneath the cortex as well as deep, old, non-progressive, space-consuming lesions can, in the experience of this laboratory, occur without disturbing the electroactivity as recorded from the cortex.

A detailed discussion of the technic of reading electroencephalograms is not within the scope of this paper.[3,4] However, these are the points on which localization in this study was based. The electroencephalograph records the normal cerebral electroactivity as a series of smooth, rounded, approximately sine waves of five to six millimeter amplitude on the graph paper at the usual amplification where .5 cm. equals 50 microvolts. (Fig. 1.) The alpha activity, best developed in most



1. (Normal) These are di-polar tracings from leads placed in the standard eight electrode arrangement recorded by means of a six channel Grass Apparatus. Recording 1 is taken from the left front-parietal region, 2, from the left temporo-parietal region, 3, from the left parieto-occipital region, 4, from the right fronto-parietal region, 5, from the right temporo-parietal region, and 6, from the right parieto-occipital region. The other illustrations are labelled in the same fashion. Note evenness of amplitude, stability of frequency and regularity of form.

instances over the occipital regions, is a series of such waves with a frequency of from eight to twelve per second. In general, subcortical disturbances are reflected in the graphs by waves of increased amplitude and slow frequency. Disturbances confined to the cortex usually produce increase in frequency with "pointing" or "spiking" of form. The form of the waves is a resultant of amplitude and frequency. In rare instances of convulsionary disorder the pattern is characteristic and of diagnostic significance. The rapid discharges of high amplitude that result in the recording of spikes of high altitude and great frequency are often associated with convulsionary tendencies. The recordings from the two hemispheres of the normal brain, with exceptions negligible for the present purpose, are bilaterally symmetrical. Comparison of the simultaneous activity of the two hemispheres, in some cases, results in the detection of asymmetry that is of assistance in localization of disorder.[5] Important is the observation that disturbances localized in either frontal or occipital lobe are frequently associated with changes in the electroactivity over the lesion as well as with lesser changes over the diagonally contralateral region of the brain; i.e., left frontal to right occipital, etc.[6]

Reports

Fourteen cases were studied and those to be described were taken as exemplary.

Case 2—Electroencephalogram: The records show dis-

turbances of the cerebral electroactivity that are rather mild but generalized and suggest pathological change in the left parietal region. Presumably the process is one of very superficial scarring involving the motor region rather than the occipital region. (Fig. 2.)

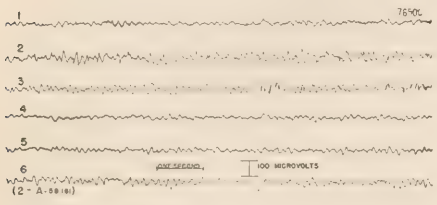


Fig. 2.—(A-58161). See text.

The mother of this eleven-year-old white girl (A-58161) is said to have a similar affliction. The facts of the delivery are not known. The history of early development is not reliable but it is said that the condition was first noticed at birth. The child entered school at six years and reached the fourth grade at ten years.

Examined at ten years, the general appearance and facial expression were good, nutrition was fair; only the legs were involved, but both of these were affected causing stiffness of gait; speech was clear, voluntary motions rapid in the arms and slow in the legs, tendon reflexes all hyperactive.

The clinical diagnosis was congenital pyramidal spastic paraplegia involving the lower extremities.

Psychological note: The child is making fair progress in school.

Case 3—Electroencephalogram: The records show involvement of the right hemisphere, especially the posterior parts with the left side being more nearly normal. There is no involvement of the deep structures. There is no susceptibility to convulsions.

This thirteen-year-old white girl (A-62638) was born at term after an uncomplicated pregnancy and a four-hour labor. Delivery was spontaneous and the birth weight was seven pounds. She held up her head at 3 to 4 months. At 6 months the mother noticed stiffness in the arms and a tendency to draw them up tight. She sat without help at 10 years and has been walking with a little aid since that time.

At the age of twelve years she was a fairly intelligent child who attempted to coöperate but was not always able. Her speech was slurred. There was spasticity of all muscles below the neck and atrophy with weakness on the right side. Sensory discrimination was not impaired. All tendon reflexes were hyperactive, abdominal reflexes normal. Hoffman, Babinski and Romberg signs were positive.

The clinical diagnosis was congenital pyramidal spastic quadriplegia.

Psychological note: The intelligence is very low. There is slow improvement under therapy and slow progress in learning.

Case 7—Electroencephalogram: Disturbances of the cerebral electroactivity are present that suggest generalized increased cortical irritability. They raise suspicion of there being a very localized small lesion in the right motor region.

This six-year-old white boy (A-20458), born three weeks before term, after a twenty-hour labor, weighed six and three-quarters pounds. Oxygen was needed after birth. As an infant he was fed by nasal tube, had no difficulty in swallowing, was very restless and cried more than usual.

On physical examination there is no spasticity. His speech is thick. He drools and has breathing difficulty. Tongue motion is limited to extension and retraction. Coordination difficult, often impossible. Both lower and upper limbs are severely affected.

The clinical diagnosis was primary incoördination (or ataxia) quadriplegia, due to anoxemia at birth.

Psychological note: The patient is of high-average intelligence, possibly superior. He is socially immature for his age but this is attributable to his physical handicap. He is educable at preschool level.

Case 11—Electroencephalogram: These records show disturbances of the entire cerebral electroactivity more right than left, both cortical and subcortical with subcortical disturbance more particularly in the right parieto-occipital region.

This five-year-old white boy (A-47107) was born at term, weighing seven and one-half pounds, after a labor of three and one-half hours. He was cross-eyed during early development. He held up his head at thirteen months at which time he could creep, but he has never walked.

At present the boy has no local paralysis. His speech is thick, his gait unsteady and he has no balance.

The clinical diagnosis was ataxic incoördination, diplegia of the lower extremities resulting from either birth injury or congenital cause.

Psychological note: Progress has been very good in school as well as in social adaptability. His physiotherapists and teachers are very optimistic about him.

Case 12.—Electroencephalogram: These records show generalized disturbances of cerebral electroactivity bordering on cerebral dysrhythmia as seen in cases of convulsionary disorder. This suggests a focus of more severe pathological change in the right parieto-occipital region. There seems to be involvement of cortical and subcortical structures with cortical structures more affected on the right and subcortical on the left. (Fig. 3.)

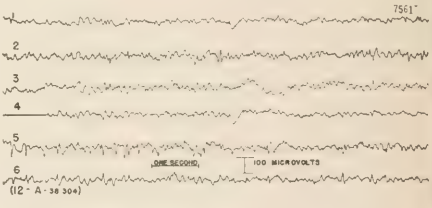


Fig. 3.—(A-38304). See text.

This seven-year-old white boy (A-38304) was born at term by cesarean section because of placenta praevia. The birth weight was seven and one-quarter pounds. He has had a convulsive disorder since infancy that is controlled by luminal and dilantin. He sat alone at eighteen to twenty months, crept at two years and was able to stand alone at five years.

On physical examination all of his body is involved by an athetoid impairment. Throat, trunk, arms and legs are included. The right foot is thrown more than the left.

The diagnosis was athetosis with involvement of all limbs due to either birth injury or congenital cause.

Psychological note: This boy has high average intelligence. From a mental point of view he should respond well to formal education and prove adequate at maturity. However, the prognosis in his case is made uncertain in view of the convulsive disorder. Progress has been fair physically. School progress has not been good because the child is flighty and lacking in powers of concentration.

Summary of Electroencephalographic and Clinical Findings

1. (A-8161) With cortical irregularity localized in the left parieto-occipital region the child has spastic and athetoid involvement of both lower extremities.
2. (A-58161) With generalized cortical disturbance and more severe irregularity in the left parietal region, the child has spastic involvement of both lower extremities.
3. (A-62638) With diffuse cortical involvement and more severe disturbance in the right occipital region, the child has spastic quadriplegia and impairment of speech.
4. (93397) With cerebral electroactivity within normal limits the child has spastic quadriplegia.
5. (A-63114) With mild, diffuse cortical involvement and somewhat more severe disturbance over the left occipital region, there is athetoid involvement of the left arm and spastic and athetoid involvement of both lower extremities.
6. (A-75020) With diffuse cortical disturbance, subcortical disturbances over the frontal lobes, more severe over the right, there is athetoid involvement of the left arm and spastic and athetoid involvement of both lower extremities along with a speech impairment.
7. (A-20458) With diffuse cortical irregularities and subcortical disturbance over the right occipital region, there is involuntary motion and ataxic involvement of all four extremities and a speech impairment.
8. (A-282) With diffuse cortical irregularities more severe over the occipital region, there is incoördination of all four extremities and speech impairment.
9. (A-59779) With cortical activity affected over both frontal, both occipital and the left parietal regions, there is spastic hemiplegia on the right side.
10. (A-5) With diffuse cortical irregularity, there is mild athetoid involvement of the left upper and both lower extremities.
11. (A-47107) With diffuse cortical and subcortical distubance more severe over the right occipital region, there is ataxic involvement of both lower limbs along with speech impairment.
12. (A-38304) With diffuse cortical and subcortical disturbances more severe over the right occipital region, there is athetoid involvement of all four limbs along with speech impairment.
13. (40779) With diffuse cortical disturbances, frontal and subcortical irregularity and greatest abnormality over the frontal regions there is spastic and athetoid involvement of all four limbs along with speech impairment.
14. (A-13448) With disturbance of the cerebral electroactivity over the entire left hemisphere indicating a rather well circumscribed lesion in the left parieto-occipital region of the cortex, there is right spastic hemiplegia with clear but slow speech.

Thirteen out of fourteen children from the cerebral palsy clinic had abnormal electroencephalograms. No significant correlation could be made between the electroencephalographic changes and the type of physical handicap; i.e., spasticity, athetosis, or incoördination. In those records where there was both cortical and subcortical involvement, there was impairment of speech; i.e., numbers 6, 7, 8, 10, 11 and 12. In number 3 there was generalized, rather severe cortical disturbance of the cerebral electroactivity and in this case there was likewise a speech disturbance. There was no correlation between the cerebral electroactivity and the intelligence potential of the patient. In two hemiplegic patients (9 and 14) studied, there was more disturbed electroactivity in the contralateral cortex. However, in the case of one of these patients (9) the paralysis of the upper extremity was obviously due to a local birth trauma. Patient number 12 with a focus of repeated spikes had a history of convulsions.

Discussion

Although this series is a small one, it seems evident that electroencephalography, at present, offers little help in the amplification of the clinical diagnosis in children with cerebral birth injury and the congenital cerebral abiotrophic and degenerative palsies. Electroencephalography may be of assistance in differentiating those children who may be subject to convulsive seizures. It may help in those apparently rare cases in which a definitely localized area of scar tissue is the seat of disfunction.

There is a rather striking disharmony between what might have been expected from clinical study and the localizing electroencephalographic findings. In view of the possible diffuse nature of the changes in the central nervous system in these cases, it is interesting to find gross normality of the cerebral electroactivity in such a severely handicapped child as number 4, who has a spastic paraplegia. The fact that there is not the slightest cranial nerve involvement in this child makes the speculation a possibility that his disorder is due to a very small lesion in the brain stem along the course of the pyramids, possibly near the level of decussation. Such functional impairment along with evidence of grossly healthy tissue activity calls attention to the fact that it is not interference with the function of the bulk of an organ, in this case the brain, but only the proper function of its most specialized parts, that is important from the standpoint of the clinician.

No correlation could be made between the magnitude of disturbance of the cerebral electroactivity and the intelligence of the patient. This is not surprising considering that Kreezer[7,8] found that mentally defective patients showed abnormalities only when the mental age was somewhat below five years. On the other hand, Lindsley[9] has demonstated that in behavior disorders in children with normal or even superior intelligence abnormalities of the cerebral electroactivity are frequently found. Thus, at least in the light of present knowledge, the intellectual function of the brain and its "neuronal" electroactivity seem to be unrelated.

Summary

1. The electroencephalogram gives information regarding the extent and localization of the cerebral lesions, but it is not of additional,

clinically diagnostic value in cases of cerebral palsies.

2. It is not possible to evaluate the intelligence potential from the electroencephalogram.
3. A prognosis from the electroencephalogram with regard to susceptibility to convulsive seizures in these cases is rarely possible.

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TREATMENT OF CERVICITIS WITH 'NEGATAN' (NEGATAL, LILLY)

Although cauterization of the cervix can successfully cure many cases of cervicitis, in some cases it is contraindicated. In 260 such instances observed in the gynecologic clinic at Bellevue Hospital (*Am. J. Obst. & Gynec.,* 43:897, 1942), the efficacy of 'Negatan' applied locally—cure in 65 per cent of the cases was effected, with no untoward reactions.

'Negatan' is a condensation product of *m* cresol sulfonic acid and formaldehyde; acid in reaction, and having a strong coagulant action. Apparently it is not absorbed from mucous membranes, skin, or extracascular tissues. It is employed effectually as a hemostatic in post-cautery cervical bleeding, or bleeding from tenaculum puncture wounds, and even in cases of moderately profuse bleeding from cancerous lesions of the cervix.

NO MALARIA-CONVEYING MOSQUITOS IN OKEFENOKEE SWAMP

(W. C. Fromne, U. S. Pub. Health Service, in *Pub. Health Rep.,* Aug. 14th)

The absence of malaria in the Okefenokee Swamp, in southeastern Georgia and northern Florida, may well have puzzled sanitarians. Here, surrounded by more or less malarious swamps, is a salubrious one 600 to 700 square miles in extent. Abounding in the Okefenokee is an anopheline mosquito of which an early visitor, Captain Rodenbough said a century ago that "mosquitoes sometime rise in such swarms that the trees are seen dimly as though a dust storm.'" Surveys by malariologists confirmed the reported lack of malaria, established the presence of great numbers of anophelines, showed house infestation by anophelines to be the rule. All anophelines breeding in the water of the swamp belonged to a single species, *A. crucians*—no *A. punctipennis,* nor *A. quadrimaculatus,* the principal malaria vector in the southeastern United States.

A possible explanation was adduced from a study of a bog near Meinhard, Ga., which was found to be of the sphagnum type pond. The entire Okefenokee Swamp and many outlying basins are of this type and there only *A. crucians and little or no malaria might be expected.* .....

Several sanitarians have recognized a proclivity manifested by some races of *A. crucians* to breed in highly acid waters, such as those of the Okefenokee.

EXCELLENT RESULTS FROM USE OF SULFANILAMIDE IN GONORRHEAL OPHTHALMIA

(Wm. H. McCall, Asheville, in *Bul. Buncombe Co. Med. Soc.,* Aug.)

Immediate smears were taken from all cases with a purulent conjunctivitis. Those positive for the gonococcus were immediately hospitalized. Each patient was isolated and strict isolation technique observed. A special nurse on 24 hours a day, until the smear became negative and stayed negative for three successive days as a minimum. If the infection was unilateral a Buller shield was placed over the uninvolved eye. All patients were kept on their backs with the involved eye lowest, to lessen the danger of contaminated material flowing into the uninvolved eye. In bilateral cases this precaution was not necessary. The nurse irrigated the conjunctival sac every 15 minutes, or as often as necessary to keep the eye free of pus. For these irrigations a 0.5% solution of sulfanilamide in normal saline solution was used. In cases with other gonorrheal complications — vaginitis, urethritis, arthritis, etc.—supplementary doses of sulfanilamide or sulfathiozole were given according to age and weight. In most cases a great improvement was noted within 24 hours. Corneal lesions had been arrested or begun to heal. Atropine and antisyphilitic treatment was used when indicated. Adults were given a bland diet with proper care for any complications.

Nurses wear rubber gloves to prevent finger nails from traumatizing the cornea, also to prevent the nurses from becoming infected.

The irrigations are done with a soft rubber-tipped syringe, preferably a rubber ear syringe. The solution should not be directed directly on the cornea.

In this series of cases no other medicinal than a half saturated sulfanilamide solution was used in the eye. No hot or cold applications or fever therapy was employed.

It is now known that sulfapyridine is more effective against most strains of gonococci; sulfathiazole is even more effective than sulfapyridine.

Results:—

	Days for Cure
Average by routine formerly used	27.2
Average by irrigation and by mouth	6.3
Average by irrigation only	6.38

TONSILLECTOMY AND ITS EFFECT ON THE SINGING VOICE

(W. A. C. Zerffi, New York City, in *Arch. of Otolaryng.,* June)

Some impairment of the palatal muscles after tonsillectomy is unavoidable. But this impairment need be only temporary and can be eliminated in a relatively short time provided correct vocal exercises are employed.

The palatal muscles are the only vocal muscles which are in any way capable of being consciously affected. All others operate subconsciously. One can be trained to raise or lower the palate at will. Since the normal swallowing action brings about a raising of the palate and a drawing-down of the tongue, this dual action must be broken up in order to allow the palate to operate independently of the tongue.

Eye Injuries*

J. G. Johnston, M.D., Charlotte, North Carolina

EYE INJURIES are too numerous and too grave to be considered adequately in one short paper. I shall, therefore, confine my discussion to those that affect the anterior part of the eye, and these will not be gone into in detail, but only in a general way, both as to symptoms and to treatment. The injuries of the posterior part of the eye, including foreign bodies in the vitreous and the use of the magnet will be left for consideration at some later time.

The eye is subject to all the injuries of the other parts of the body as well as some that are peculiar to itself. These injuries may range all the way from small foreign bodies under the lid to laceration and rupture of the eyeball. These injuries may be classified as penetrating and non-penetrating; they may also be classified as anterior—wounds through the cornea, lateral—wounds through the ciliary region, and posterior—wounds through the conjunctiva and sclera. Many injuries of the anterior portion of the eye are superficial, do not penetrate the eyeball at all, but are nevertheless dangerous, as it is possible and probable that unless they are attended to in the proper manner infection and ulcers of the cornea will develop with threat of serious impairment of vision, or even greater disaster. We see many cases in which foreign bodies in the cornea have had an attempted removal by a layman, a druggist, or some one else who is not prepared for the work and in which the cornea has been scracthed and lacerated and left wide open to all sorts of infection. Many of these eyes will be very red and painful for several days and these are the ones in which corneal ulcers generally occur. No embedded foreign body in the cornea should have an attempted removal except with a sterile instrument and after local anesthesia. It is almost impossible to hold the eye still unless it is anesthetized, and it is equally impossible to remove an embedded foreign body from the cornea of an eye that is roving to and fro without rather severe abrasion of the cornea—hence the absolute necessity for anesthesia.

Anesthetize the eye, remove the foreign body as gently as possible and with the least possible abrasion of the cornea, then sterilize the wound, instill a drop of atropine or homatropine if the circumstances require it, and apply a snugly fitting eyepad of sufficient thickness to prevent movement of the lids. Treated in this manner a great majority of these eyes will be practically well in twenty-four hours and the patient able to return to work; but unless the lids are immobilized the new cells will be destroyed by the movement of the lids almost as rapidly as they are formed and the eye may be disabled much longer. As to what disinfectant to use, in my opinion this does not make a great deal of difference. There are many good ones. Some rely on mercurochrome; others agree with Dr. Thornwell Davis that tincture of iodine is probably the best; others prefer carbolic acid as a disinfecting and cauterizing agent. On a sharp-pointed instrument is wrapped a very small amount of cotton and the application is carefully made to the wound, and to the wound only. Recently I have been using as a sterilizing agent a solution of iodine (20) phenol (60) and glycerine (20) with excellent results and, as it does not destroy tissue as deeply as pure carbolic acid, it has been gradually displacing the phenol with me in these cases. It leaves a shallow white eschar which is always gone at the time of the next dressing. During a considerable number of years I do not recall a single ulcer of the cornea developing after removal of a foreign body, when treated from the beginning in the manner described, while they have occurred in several instances in cases in which these precautions were neglected.

Serious as these injuries sometimes are, those which penetrate the eyeball are much more so as a rule. A penetrating wound of the cornea may injure not only the cornea, but also the iris, the lens, or the ciliary body. In these injuries frequently the iris is prolapsed through the wound and becomes adherent to the edges of the wound or in the angle. It must be loosed from its adhesions by the use of atropine in the eye, or perhaps by subconjunctival injection of atropine. Failing to break up the adhesion in this manner the prolapsed portion of the iris must be excised, first making gentle traction on the iris in an effort to break up the adhesions.

It frequently happens that along with an injury of the iris you have also an injury to the lens. In that case a traumatic cataract will most probably occur which will either be absorbed by nature or have to be removed by operation. In young persons they will frequently absorb but in the elderly they will generally have to be operated on. In case the lens is injured and cataract forms, if the pa-

*Presented to the Mecklenburg County (N. C.) Medical Society, October 22nd, 1942.

tient is not over 25 years old it is usually safe to use atropine to dilate the pupil and watch the eye. If the eyeball does not get too hard or painful many of these lenses will go on to complete absorption, but if the tension goes up and the eye gets painful operation must be considered. Some of them may require only opening the eyeball and washing out part of the soft lens matter, leaving the remainder for nature to handle. If the patient is older and the tissues of the eyeball are less elastic it generally is better to remove all the lens if possible.

During the army maneuvers in 1941 we had a rather unusual and interesting punctured wound of the eyeball, or at least the manner in which it had been inflicted was interesting. At a gathering on Saturday night a soldier and a country boy had a little mixup in which a knife was used freely. The farmer boy came out with two cuts across the right cheek, one of which ended in the corner of his mouth, and three across his forehead. The lower of the forehead cuts was just above the eye, and the knife coming downward passed over the upper rim of the orbit beneath the skin, behind the lid and across the eyeball making an incision through the sclera one-half inch long, leaving the lid intact. The wounds of his face had been sutured the same night, but the wound of the eye was not discovered. We saw him late Monday afternoon and found the eye injury which had the iris protruding from the nasal end of the wound in the eyeball. The iris was replaced; but as it prolapsed again it was cut off and the pillars then replaced. The wound in the sclera was not sutured as it coapted nicely, but a large conjunctival flap was drawn over it and stitched down securely. The lens did not appear to be directly injured, but there was such an appearance of opacity about it that the remark was made that we would certainly have a traumatic cataract to deal with. Atropine was instilled in the eye, and 1 c.c. of a weak solution of free iodine was injected subconjunctivally below. The eye was dressed and was not opened for 48 hours, when there was no sign of infection and the lens was perfectly clear. He was allowed to go home after the fourth day, coming back to the office every two or three days for examination and treatment. The eye continued to do well and six weeks after the injury refraction was done and with the correction he had 20/20-2 vision. The amount of astigmatism was about the same as that following an ordinary cataract operation.

There is one other type of wounds or injuries in the latter classification about which I would like to say a few words; that is those penetrating or incised injuries in which the ciliary body is injured. Years ago an eye in which the ciliary body was injured was deemed a very dangerous eye and the patient was advised to have it enucleated. This advice did not always suit the patient, and sometimes it was disregarded and the patient went on for years with no trouble from it at all. Again occasionally a patient with only one eye would come in with the eye injured and the injury extending into the ciliary body. Of course you could not advise enucleation in that case and consequently had to do the best you could and try to save the eye. Having had some very interesting and a few rather spectacular results with the injection of iodine subconjunctivally, I used it in those cases and so far have had no regrets on account of its use. On the contrary it has become part of my regular routine of treatment of this type of injuries. Of course, atropine and the other regular treatment of these cases was carried out at the same time.

I mentioned earlier in this paper the frequency with which a traumatic cataract would absorb in young people, but occasionally nature reverses herself and does things in exactly the opposite way. This is illustrated by the following case:

A surveyor, 60 years of age, went into a dark closet and stooping to pick up something struck his forehead just above the right eye a severe blow on the edge of a shelf causing an intense pain which, however, lasted only a few minutes. He had been surveying a few days before this and as he always used his right eye in his work, he knew that his vision was good in that eye at that time. Two months later he happened to close his left eye and was surprised to find that he could not see clearly with his right and in another month he had a fully developed cataract in the right eye. He was advised by Dr. Calhoun of Atlanta and others that his left eye was perfectly good and not to think of having the right operated upon at that time. He followed this advice and for ten years used his left eye entirely, seeing nothing with his right. Then about 1909 or 1910, one winter when everyone was having la-grippe his right eye became red and slightly uncomfortable. It did not clear up under the usual treatment, so he was given a weak atropine solution and the eye was watched. This went on for probably five weeks when he said to me that things were beginning to look brighter with that eye, and in a few more weeks he said he could begin to get the outline of a tree or a man in a bright light. At the end of three months he could read large print with the aid of a cataract lens. He did not have a lens fitted to that eye, but continued to use his left for all his work. Ten years later the left eye began to develop an opacity of the lens and a year later he had a full-fledged cataract in the left eye. He never had this eye operated on as he said that one eye was all he had been accustomd to and was all he needed. He had a cataract lens fitted to the right eye and to the end of his life, twenty years later, he read the papers and kept up with the happenings of the world. He said he hoped to live one hundred years, but missed it slightly, dying at the ripe old age of 98.

Truly Medicine has many wonderful and interesting things in her records.

From this I believe we may draw the following conclusions:

(Continued on page 620)

CLINIC

Conducted by
FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.,
High Point, N. C.

A 33-YR.-OLD wife of a millworker was referred to me for an opinion as to diagnosis by her physician in another city. She complained of an eruption of obscure nature. She consulted me Jan. 21st, 1940, accompanied by her physician. She had had a hysterectomy for bleeding 3 years previously. Cancer was excluded. She complained then of dysmenorrhea, too, and was very nervous. She had had a salpingectomy 5 years before that and a tonsillectomy in 1936, also an appendectomy at the age of 19. During the operation for hysterectomy adhesions were broken up. The uterus was found bound to the right side of the pelvic wall, adherent to the ovary and cecum. The gallbladder was not examined at operation. The uterus was described as small and globular, with its walls fibrotic, and mucosa moderately thick. At the time of operation her white cell count was 9,000 and red cell count 5,000,000, according to the hospital records. She did pretty well after operation for about a year. Then she began to have big splotches showing dark areas looking like purpuric patches that would exude serum and then turn raw (on the surface of her body). Her physician took her to the Masters Clinic at the Tucker Sanatorium in Richmond, where she stayed 3 weeks without a diagnosis from any of the 18 or 20 doctorrs who saw her, including dermatologists and other specialists. Just before going to Richmond, she went to Duke, it was learned later. She had also been to a urologist in Greensboro because of pyuria. She has very little vaginal discharge. Her physician then left the state for about a year, and she was under the care of two other physicians in her home town.

She was readmitted to the hospital in that town Feb. 26th, 1939. Her history showed a story of influenza and meningitis at the age of 4, but was otherwise unimportant. She was having attacks of painful urination and backache at intervals, but the thing of chief interest was the peculiar skin disease characterized by small circumscribed bruised-appearing lesions *on her forearms and thighs*. These gradually progressed into pustules or sores. She still has these, along with some general weakness. In hospital she was nauseated and vomited all her food for several days, and was given saline and glucose for dehydration. Numerous scars were noted, also encrusted superficial sores and areas of induration in the subcutaneous tissues. *These appear only on the anterior surfaces of the arms and legs, in easily accessible areas.* Earlier lesions were described as showing a needle-point opening at "the periphery." Examination then was otherwise negative. The diagnosis in the hospital was *factitious ulcers of the legs and arms with hypochondriasis*. Other factors in the hospital record in 1939 were as follows: Urine showed an occasional r.b.c., with many pus cells. Later the r.b.c. persisted, but the pus cells were few in number. There was a persistent trace of albumin. Blood showed w.b.c. 14,550 with 72% neutrophiles. Hemoglobin 88%. Blood sugar 92 mg. per 100 c.c. Psp. test 35% in one-half hr., 54% in 2 hrs. Highest temperature 100, became normal and stayed so after 2 days in hospital. Highest pulse rate 100. Resp. rate 20 throughout.

Her physician said that the night before he brought her to me she said that her stomach was burning up, and she wouldn't take more than one dose of kaomagma, which he tried to give her, and "then tossed about in bed like an animal and grabbed her physician by the hand suddenly." Her physician said she took 5 acetidine tablets at a dose for headache, but patient's sister said she believed she took all the 8 tablets she had at one dose. Anyway, the tablet box was emptied. Her physician suspects the possibility of drug addiction, as he had to give her 2 "H.M.C. tablets" to relieve pain in her back, sides and abdomen (hyoscine, morphine and cactin).

Patient's husband says she has passed urinary stones. Patient spends much of her time to herself when her husband is at work. This preliminary information was obtained before admitting the patient herself to my consulting room. The patient then came in, and stated that the lesions appeared first on the inner sides of the legs below the knees. Then they developed along the arms and forearms and on the anterior surfaces of the elbows (in the bends of the elbows). Then they came on the outer and anterior thighs—never on the posterior surfaces. They never developed on the head, neck or trunk, or on the hands. One lesion appeared on the top of one foot. No lesions on soles.

She has been nervous ever since she can remember. She did not have the skin spots when she went to Duke in July, 1937. The first spots (3 or 4 at a time) appeared in August, 1937, and then she went to Richmond, in January, 1938. She has been nervous ever since meningitis at 4 years of age. She graduated at a teachers' college at the age of 18, and then taught for 7 years. She married 3 yrs. before she stopped teaching. Then she got tired teaching. She was never pregnant, but "wouldn't mind having one." She was 30 at the time of her hysterectomy. She denies, however, worrying over her inability to have a baby. Says she likes to stay by herself. At the hospital they

wanted to put all her limbs in casts to see if the lesions stopped appearing, as they would if self-inflicted, but she refused.

It still seemed probable that the diagnosis was *dermatitis factitia,* probably on a hysterical basis. Her general appearance, however, did not seem quite what one might expect in a patient with that condition.

About 3 months later, while systematically reading the new edition of Sutton and Sutton's *Diseases of the Skin,* I ran across the description of a condition previously unknown to me, that strongly suggested the condition seen in this patient. I wrote her physician at once, calling his attention to the matter, but, so far as I know, he has not been able to establish that diagnosis. I believe he had lost track of her. Under the heading "Panniculitis," Sutton & Sutton first discuss relapsing febrile nodular nonsuppurative panniculitis, the Weber-Christian syndrome, with which I was familiar, "at least in the literature, but then they add:

"*Liquefying nodular panniculitis* was exemplified by a woman who developed deep, painful woody nodes in crops of 2 or 3 at a time, involving the extremities and buttocks; the lesions in 7 to 10 days became cystic and broke through the thinned reddish overlying skin to discharge 1 to 4 ounces of oily liquid, and then healed with the formation of depressed scars covered with atrophic skin (Shaffer, 1938). This unique case may be recognized on further study as factitious."

Cf. SHAFFER, B.: *Arch. Dermat. & Syph.,* 1938, XXXVIII, 535.

If this liquefying nodular panniculitis is a clinical entity, that may be the true diagnosis. If it is merely a form of dermatitis factitia, then that remains the probable diagnosis in this case.

Furmenty

In the Middle Ages this old English food was called frumity, frumetye, furmenty, furmenti, and formenty; and in the 14th century, was prepared according to the following recipe:

'Nym (take) clene Wete and bray it in a morter wel that the holys (hulls) gon al of & sethe yt til it bruste, and nym yt up and lat it Kele (cool), and nym fayre fresh broth and Swete Mylk of Almandys or Swete Mylk of Kyne & temper yt al, and nym the Yolkys or eyryn (eggs) boyle it a lityl, and se tyt ad on and Messe yt forthe wyth fath Venyson & fresh Moton.'

EYE INJURIES From p. 618

1. No injury of the eye is so insignificant as not to be worthy of careful treatment.

2. Gentleness in the handling and treatment of eye injuries is very important.

3. An eye will sometimes stand a great deal of rough treatment and still have useful vision.

4. The amount of injury is no criterion as to the amount of vision you may have afterward.

CHIGGER AND JIGGER BITES

(Capt. J. E. Weigel, in *Mil. Surg.,* Feb.)

The chigger is the harvest mite, the jigger the sand flea. The *adult* forms of the chigger do not infest man or animals, we are concerned only with the larval form, which in order to survive must become parasitic. With only one generation of chiggers each year, the larval forms torment us only during June, July and August. Their host can be either warm- or cold-blooded animals—man, domestic and wild animals, rodents, ground-nesting birds, reptiles and insects. Chiggers remain attached from 2-4 days if not disturbed and then drop off.

Chigger bites are most numerous below the knees except in the rare instances of invasion from the neck and shoulders downward. The larvae prefer areas where the skin is thin, rarely attack the face or hands. A low-power hand magnifying glass will show them as a tiny red spot at the center of a bite. The chigger larva does not burrow, but attaches itself to the skin surface with an efficient mouth. The itch is caused by the liquefying of the epidermal tissues by a secretion which the larva injects into the wound.

Powdered sulfur is the best repellent. A mixture of 1 part of powdered sulfur to 4 parts of a high-grade vanishing cream known as hazeline snow applied to the skin leaves an almost invisible film of sulfur. It can be applied to a wide area quickly and dries rapidly. A small amount covers a large surface. This preparation is applied before soldiers go into the field, and then reapplied after a soapy shower on return to camp.

To remove the larvae, a half-hour of bathing, using plenty of soapy water, and then after drying a light application of the sulfur cream. There should be a complete change of clothing.

Intense itching and irritation may persist up to a week after removal of the parasites. To soothe and to prevent secondary infection, spray several times daily with 70% alcohol, and apply boric acid ointment to which has been added 10 grains of phenol and 5 grs. of menthol per ounce. Borated talcum powder may be dusted over the surface after application of the ointment.

The *jigger,* a small insect which flies, is most prevalent in hot, humid atmospheres. The female attacks warm- and cold-blooded animals, especially the human being and the pig. Burrowing into the skin as a scarlet mite, the jigger soon swells to the size of a flea, due to ingested blood and the maturation of eggs.

The jigger attacks man on the hands, wrists, ankles or neck, but will bite any exposed portion of the body. After becoming engorged with blood the female searches for warm, moist places to deposit her eggs; cracks or crevices in old buildings or barracks, in rubbish and damp basements, or in the ground and debris about buildings are her favorite sites.

The insect shuns light, and so does her blood sucking at night. The bites produce lesions similar to those caused by the harvest mite. Clearing of rubbish around barracks and buildings, admitting sunlight to dark places, and filling cracks and crevices help in keeping away these insects.

Jiggers can pass through screening and mosquito netting. Muslin, which will exclude these insects, is too uncomfortable for practical use. The breeze from an electric fan frequently is sufficient to exclude the jiggers. The repellents most useful are camphor and sulfur. Camphor in small bags may be rubbed on the exposed surface at night. A solution of camphor, menthol and phenol painted on the skin also is of value.

The sulfur cream is an excellent preparation for application as the insects are destroyed by small amounts of it. Sulfur fumigation is useful to destroy insects in barracks or buildings.

DEPARTMENTS

INSURANCE MEDICINE

For this issue W. M. Jones, M.D., Greensboro, N. C.
Medical Director, Jefferson Standard Life Ins. Co.

LIFE INSURANCE EXAMINATIONS IN WAR-TIME

With the present world turmoil and strife, it is necessary that we do everything possible as physicians to conserve our strength, energy and time, especially the latter. Everyone must recognize the fact that changes are being made, and that none can go on in the way we have been accustomed. The younger men, below forty-five, are being called to our armed forces, and the older men are going to be compelled to do extra work, and for this reason it is essential that we make every hour count and have as little duplication as possible.

Those who have been doing insurance examinations in the past and who remain at home will, of course, continue their present relations with the various companies. To those men, we can say little that will facilitate their work except possibly the admonition that before an applicant leaves the examining room, see that every question is checked and no omissions or errors made. If the amount of insurance is such that the company demands a home office specimen, be sure and get it at the time of examination.

Concerning the newly appointed examiners that all companies are having to name, a few words will not be amiss. What the company wants is as clear and concise picture of the applicant as possible so that the risk may be correctly evaluated. In obtaining the personal history, ask and answer every question, and do not use "ditto" marks for these are not worth anything should the case ever go to court. Any answer that appears vague or indefinite, endeavor to clear same to your own satisfaction; and if another doctor has treated the case, always get his name and address. In all cases giving a history of so-called indigestion, especially above age forty, inquire particularly, for so many of these cases, and in a short time, prove to have been cardiac and both the examiner and company are faced with an early death claim.

Be particular and definite as to all operations, as to date, length of time in hospital, surgeon operating, etc.

If applicant gives a history of albumin, sugar, casts or kidney colic, always obtain specimen for home office.

Check pulse carefully at rest for one full minute, noting any irregularity of rate or rhythm and any dropped beat. If 90, give exercise test and examine again after two minutes and record the rate. Always check heart for murmurs, irregularity, etc., both before and after exercise; and if a murmur is noted, check in the standing and recumbent positions and give clearly your findings; so doing will often obviate a recheck.

Be careful as to weight and measurements; also blood pressure. The majority of companies prefer the diastolic recorded at 5th phase or disappearance of sound. If it is your custom to report 4th phase or change, then record both.

If in examining specimen, the specific gravity is below 1014, get a second specimen after abstinence from liquids; if albumin or sugar is found, so report and mail specimen to home office.

A carefully made examination, that is accurately checked, can generally be acted upon by the company without delay, whereas a careless one necessitates delay, correspondence, etc., with loss of valuable time and annoyance to examiner, company, agent and applicant.

OPHTHALMOLOGY

Herbert C. Neblett, M. D., *Editor*, Charlotte, N. C.

SUBCONJUNCTIVAL ECCHYMOSIS
Case Report

This condition as commonly seen in ophthalmic practice is nearly always the result of some more-or-less harmless local or systemic cause, is rarely bilateral, and is usually an innocuous symptom rarely productive, *per se*, of complications or sequelae. To the patient, however, because of the appearance of the globe, it is a terrifying phenomenon.

The condition is seen in varying degrees of intensity from single small to multiple areas of hemorrhage beneath the bulbar conjunctiva or involving from a quarter to the whole of the conjunctiva of the globe, the cornea excepted. In extreme degrees a hematoma may form and extrude between the lids in a large semi-pedunculated mass.

Etiology—Uusually some simple trauma locally applied as in briskly rubbing the eye with the finger, striking the globe with the edge of a comb or hair brush, or end of a towel in making the toilet. Often these injuries are so trivial the patient has no knowledge of their occurrence and it is most often seen by him on awaking in the morning or it is brought to his attention by a second person. There is no pain or discomfort, and only a fullness about the globe is experienced in the severe types. Other causes are operation on the globe, straining as in lifting heavy weights, retching as in whooping cough, trauma to the unpro-

tected eye by wind while moving at a high rate of speed in modern transportation.

Causes of a more serious nature are severe trauma to the globe, or to the bones of the orbital walls, or to the skull; in partial strangulation; and in violent inflammations of the ocular conjunctiva. The predisposing causes are degenerative conditions of the bloodvessels, arteriosclerosis, Bright's disease, diabetes, the blood dyscrasias etc.

Treatment is rarely indicated and is often of little consequence except to appease the patient, since the absorption of the blood is self-limited requiring 10 to 14 days.

Since the great majority of cases are unilateral and the result of the causes enumerated the following case is reported because of its bilaterality and unusual etiology.

A well-developed, healthy negro man, aged 33, employed in the Quartermaster Depot of the U. S. Army. Past history and general physical condition irrelevant and all predisposing local and systemic factors ruled out.

Present history: On Oct. 21st, 1942, while at work was caught from behind by a fellow worker (in a playful mood) by the flexed forearm creating strong pressure to the front and sides of the neck for a brief period. Patient experienced a mild sensation of strangulation before he broke the hold or was released but suffered no immediate or delayed pain, dizziness or loss of consciousness. The following morning was told his eyes were full of blood.

On the late afternoon of Oct. 22nd the patient was examined by me. Vision each eye 20/20, media, fundi and all tissues of the globes and adnexa were normal except for a pronounced generalized ecchymosis of the conjunctiva of both globes which was greatest at the equator of each and lessened in intensity as it reached the limbus.

UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

UROLOGICAL COMPLICATIONS OF INFLUENZA

A PERUSAL of the literature reveals that urologists have apparently paid little attention to the genitourinary complications which may occur either with an attack of influenza or immediately following it.

A recent article[1] describes in detail the illness of a patient who had the misfortune to suffer from inflammation of his testicle as a consequence of a mild attack of influenza.

In February, 1940, an Army officer was seized with a rigor and all the symptoms of a head cold. He was confined to bed for a few days, the fever persisting less than a week, but his convalescence was prolonged due to general debility. Upon returning to duty the third week in March, he noticed a urethral discharge. Much disturbed by the thought that the gonorrheal prostatitis of thirteen years previous might be returning, he sought medical advice. Examination revealed an abscess in the left lobe of the prostate.

The bacterial report on the pus was: Great number of pus cells; culture yields good growth of small gram-negative bacilli which culturally and morphologically are indistinguishable from bacillus Pfeiffer.

Prostatic massage and urethral lavage were carried out for three weeks, with steady improvement. Then the patient reported a pain in the left testicle, which was swollen, and there was high fever and general malaise. A few days later the glands in the left groin became tender and a hydrocele formed on the same side as the lesion. Treatment for two weeks had no apparent effect on the infection. However, the swelling gradually subsided, and in less than a month from the onset of the illness the inflammation of the testicle had resolved. It was feared that an orchidectomy would be necessary, but the patient's natural resistance overcame the infection. Time alone will tell if the testicle will atrophy.

Cruikshank's *Influenza* has a chapter on genitourinary complications by Henry Bugbee, who collected 39 cases of genitourinary complications during the world epidemic of influenza in 1917-18. Of the 39 cases, 22 were renal lesions, 5 perinephric abscesses, 4 prostatic abscesses, 1 perinephric and prostatic abscess, 6 epididymoörchitis, and 1 cystitis.

There does not appear to be any drug which will destroy this bacillus, and therefore genital complications must be considered a grave matter. The inflammation of the testicle is very acute and the possible necessity for its removal has to be kept in mind always. Even if this does not become necessary atrophy is likely to occur at a subsequent date. It is surprising that more cases of perinephritis have not been recorded, for the tissues around the kidneys are well known to have an affinity for blood-borne organisms and to produce metastatic abscesses readily. Also, if influenza is a septicemia, which most authorities claim, one would expect to meet with a certain number of cases of pyelonephritis. The twenty-two patients with renal complications quoted by Bugbee may have had preëxisting lesions of the kidneys. At any rate, the only proof that either a urinary or genital disease is influenzal in origin is the demonstration of the presence of the Pfeiffer ba-

1. Morson, Clifford: The genitourinary complications of influenza. *British J. Urol.*, 14:11, March, 1942.

cillus either in the urine or in the pus evacuated from the inflamed organ. Should an outbreak of influenza occur in the present war similar to that of the 1917-18 epidemics, an opportunity will be afforded to make a careful research into the incidence of genitourinary complications. For the sake of the community, let it be hoped that this occasion will never arise.

SURGERY

Geo. H. Bunch, M. D., *Editor,* Columbia, S. C.

CONTINUOUS BLOOD TRANSFUSION IN PROLONGED OPERATIONS

Since operative pain and the hazard of postoperative infection have been eliminated by the discovery of anesthesia and of asepsis, since preoperative preparation of the poor-risk patient has been practiced and since the necessity for careful hemostasis and for gentleness in manipulation of the viscera have been understood, surgical endeavor has daringly grown so that greater accomplishment is now limited chiefly by the ability to control operative shock. This is essentially a problem of prevention rather than of cure although proper treatment may often be effective in overcoming shock.

Operative technique is now sufficiently perfected to permit the doing of average major operations upon good-risk patients with negligible shock. But when major operations have to be done upon the aged, upon the anemic and upon the poor-risk patient, effective precautions should be taken to prevent shock. And when severe or prolonged operations have to be undertaken even the good-risk patient should be protected against shock.

In the early days of major surgery when the degree of shock was determined by progressive rapidity and weakness of the pulse the condition was controlled by the administration of strychnine or of some other cardiac stimulant. Then after several years shock from dehydration and hemorrhage was treated by increasing the blood volume by the subcutaneous administration of normal salt solution. To provide the circulation with fluid that would be more lasting in its effect than the saline, glucose solution given intravenously has for several decades in most hospitals been routinely used both for the prevention and for the treatment of shock. In maintaining blood pressure at a safe level, in preventing acidosis and in supplying calories that are immediately available for metabolic use, it is also of benefit postoperatively.

Now that operative procedures of a magnitude not previously dreamed of as being possible are undertaken and successfully accomplished by the better trained more experienced surgeons, shock is prevented by continuous intravenous-drip transfusion of citrated blood. The blood is drawn from one or more donors whose blood has already been typed and cross matched. Administration begins as the patient lies on the table before the incision is made and continues throughout the operation. In abdominal work a vein in the foot rather than one in the arm is used so as not to interfere with the surgeon or the assistant: By this method extensive thoracoplasties and lung resections, one-stage resections of the stomach and of the colon, mutilating brain operations, hip-joint amputations, radical operations for cancer of the prostate and of the bladder may all be undertaken with reasonable assurance of success, provided at operation exsanguinating hemorrhage does not occur. The continuous blood drip has extended operability in cancer, it has brought the possibility of operative relief to the aged and to the infirm.

In war surgery after bleeding has been controlled it will be useful in restoring blood volume, in treating shock, in raising hemoglobin content, in making the injured soldier a good risk for restorative surgery. Its administration will not be feasible in first-aid stations, but in base hospitals. When casualties are severe its use will be limited only by the supply of blood that is available.

TUBERCULOSIS

J. Donnelly, M. D., *Editor,* Charlotte, N. C.

PULMONARY TUBERCULOSIS IN OLDER AGE GROUPS

For years in tuberculosis work the greatest emphasis has been placed on the recognition of infection and active disease among students in high-schools and colleges, and individuals in early middle life. Tuberculosis has been called a disease of youth, and hence there has been considerable neglect of the disease in the older age periods. Many individuals among the youth of the country, infected at some time by extensive tuberculous processes, develop sufficient resistance to the infection to hold in abeyance the active symptoms, even far into old age. These cases many times remain unrecognized as tuberculous, but are always a danger to all contacts, especially to children, since the sputum is frequently positive for tubercle bacilli over many years.

The location of such cases is one of the most difficult problems in a tuberculosis-control program, since it is difficult to obtain mass examination of the general population. To a great extent this part of the control program is in the hands of the general practitioner of medicine, who, as a rule,

is the first to see these elderly spreaders of infection. He should be alive to the possibilities in every elderly patient who complains of "chronic bronchitis," "asthma," "stomach trouble," or has a history of a weakened physical condition over a period of years. Unfortunately, it has been the generally accepted opinion among the laity that chronic cough and physical weakness, with probably very gradual loss of weight, is characteristic of the more or less senile condition of these patients, and that such symptoms require no particular attention. Because of this fact many of these patients have been probably for years a serious source of infection to contacts. Old people frequently refuse examination, because they cannot be made to realize that they may be sources of infection, or they are afraid that some disease condition may be found that will alter their accustomed manner of living. Even when examination is permitted and active disease is found treatment of the condition and the protection of contacts is many times impossible because many refuse to accept advice as to their conduct and decline to submit to discipline. Many of the elderly tuberculous individuals are strong and well nourished, and are able to carry on their work, but the highest death rate from the disease is among men from 65 to 70 and among women from 75 to 85.

In a recent issue of the *American Review of Tuberculosis*, Miller and Henderson have an article on this problem of tuberculosis in the aged. Among 3,414 unemployed adults examined in a New York City chest clinic, 281 instances of previously undiagnosed pulmonary tuberculosis were discovered. Of this number, the disease was clinically significant in 100 cases, active in 29, the activity proved either by progressive or regressive changes in the x-ray appearance of the lesions, or sputum positive for tubercle bacilli, or both. These cases of chronic pulmonary tuberculosis represented 10.6 per cent of all males and 6.4 per cent of the females, the lesions were clinically significant. Twelve of the positive-sputum cases found in this survey were over 50 years of age, and none of these had any marked symptoms and some remained symptomless in two years of observation.

In the total number of cases with significant lesions .82 per cent were under 40 years of age and 2.06 per cent over 40. It can be inferred that tuberculosis in the aged in the higher income groups occurs with sufficient frequency to be of moment.

The new figures quoted in this article seem to indicate the importance in a tuberculosis control program of greater efforts to locate cases of active tuberculous disease in older people. At the present time, the demand for both experienced and inexperienced workers in the defense industries has induced many older people to attempt hard and unaccustomed labor, which will often result in the breakdown of long inactive pulmonary tuberculous lesions, particularly if the living conditions are poor and the food intake inadequate for the preservation of sufficient physical resistance to combat the disease.

It is of the utmost importance to put more emphasis on such previously hidden sources of tuberculous infection, if the reduction in the death rate from the disease is to be continued, but such work should not in any way lessen or handicap case-finding work among younger persons.

DERMATOLOGY

J. Lamar Calloway, M.D., *Editor*, Durham, N. C.

THE DIAGNOSIS AND MANAGEMENT OF INDUSTRIAL DERMATOSES

With the introduction of substitute materials in addition to the general speeding up of manufacturing processes in the present emergency, the recognition of industrial dermatoses occupies a very important place in medical practice. Some 65 per cent of all the occupational diseases with which manual workers are affected are a result of industrial dermatoses. These industrial or occupational dermatoses comprise those skin conditions which are due wholly or in part to various noxious agents encountered during employment. It is very important to establish definitely whether or not the dermatosis is the result of employment since the employer, the employee, the insurance carriers, and the State Industrial Commission are all vitally concerned.

Certain diagnostic criteria may be listed in establishing the diagnosis.

1. The dermatosis appears during employment.
2. The dermatosis tends to clear up when the patient is away from work.
3. The dermatosis tends to reappear when the same work is resumed.
4. Other persons doing similar work are similarly affected.
5. The dermatosis may be reproduced or simulated by patch test.
6. Other possible causes have been eliminated.

The patch test in which the suspected material in the proper concentration is applied to the skin gives strong supportive evidence, yet there are certain limitations which should be pointed out. The patch test may be negative because of local tissue immunity, the solution tested may be in too weak a dilution or the actual working conditions may not be accurately reproduced. On the other hand false positives are encountered when the pa-

tient has a polysensitivity or when the material used for testing is a primary irritant.

Industrial dermatoses may be prevented by the following approach:

1. Careful examination of employees for pre-existing skin diseases.
2. The use of clinical history and patch test as an aid in evaluating susceptibility to possible future irritants.
3. Protective devices such as special clothing, creams, mechanical devices etc.
4. Proper hygiene in plant and workers.
5. Change in manufacturing processes in which less irritating materials are substituted for the more noxious ones.

Treatment should be begun early since if allowed to progress for a long time chronic dermatoses develop in which many secondary factors play a part. Complete removal of the causative agent or agents is imperative for cure and this may be done by substituting non-irritating materials or changing the person's job in the same plant. Local therapy should consist essentially of soothing applications such as warm saline compresses, simple cold cream, and some antipruritic lotion. The older and more chronic eruptions also require the use of various stimulants, ultraviolet light or x-ray therapy and usually need the services of a dermatologist trained in the diagnosis of these problems.

OBSTETRICS

HENRY J. LANGSTON, M.D., *Editor*, Danville, Va.

PARALDEHYDE IN OBSTETRICS

POSSIBLY this article[1] may be a bit overenthusiastic, but, when we consider how popular paraldedye is becoming as a sedative in other fields this certainly sounds promising.

The usual initial dose of paraldehyde is 5 or 6 drams in an equal amount of aromatic elixir. Good effect should occur within 15 minutes, maximum in ½ hour. Duration is about 6 hours, and the original or a smaller dose may be given at this time is needed. By rectum, the dose is 8 drams of paraldehyde in 5 or 6 drams of mineral or olive oil. Here the effect is slower, 1 hour being required for maximum effect, duration the same.

The majority of the patients fall into a deep sleep with continuation of labor.

The chance of operative delivery being required is not increased. Should the latter be decided upon, some additional method of pain relief is needed. Paraldehyde does not prohibit the use of any of the general anesthetics: the amount needed for complete anesthesia is less than without it.

In eclampsia and preëclampsia it will quiet the patient more satisfactorily than any sedative used today, and will permit of time to establish whatever routine treatment is desired. The physician must not hesitate to repeat the drug as often as necessary. Large doses are tolerated well. The routine is to give paraldehyde rectally in an initial dose of 10 drams in 5 or 6 drams of olive or mineral oil as soon after admission as possible and then to start intravenous concentrated glucose and other therapy. Patients unconscious and unable to swallow, b. p. taken every ¼ to ½ hour and if restlessness is returning as the effects of the paraldehyde wear off, the dose is repeated. No attempt is made to induce labor in the antepartum group. If the patient is in labor, or if labor begins, it is allowed to continue as normally as possible, only absolutely indicated operative work being done and this invariably without inhalation anesthesia.

The amount of the drug necessary to control the convulsion varies from 12 to 15 drams to a maximum of 120 drams in one and 131 in another, both over a period of 3 to 4 days.

Paraldehyde will control the convulsions of eclampsia and permit of a continuation of the conservative treatment for an indefinite period of time.

TRANSFUSION ACCIDENTS AND ISO-IMMUNIZATION

SPECIAL CARE should be exercised in transfusing blood to women who have recently delivered infants with erythroblastosis, unexplained dead fetuses, record of habitual abortion, or a history of still-born fetus, neonatal deaths or transfusion reactions.[1] It is far safer to use pooled plasma rather than blood transfusions, unless the donor can be thoroughly tested. In the absence of immediately available sera for specific Rh tests, these transfusion reactions can be prevented by subjecting the cross matching to the "warm agglutinin" test. In other words, the donor's cell suspension and the patient's serum should be incubated for 30 minutes at 37° C. This modification is highly essential for proper selection of completely compatible donors.

A 32-year-old multiparous housewife was admitted to a New York hospital with signs of a ruptured uterus at term and a dead fetus. Cesarean section delivered a 10-pound, edematous infant. Because of anemia, a transfusion was given (donor and patient Group A Moss II). A second transfusion was given that evening for signs suggesting shock. The next morning she was deeply jaundiced, and the hemoglobin had dropped from 60 to 46 per cent. A third transfusion was given. Partial anuria developed. By the 7th day, hemo-

1. L. H. Douglass & R. E. Linn, Baltimore, in *Amer. Jl. Obs. & Gynec.*, 43, 844, 1942.

1. F. D. Sinclair, Tulsa, in *Jl. Okla. Med. Assn.*, July.

globin had dropped from 46 to 40 per cent in the absence of any bleeding. A fourth transfusion was given and for the first time was followed by signs of obvious reaction, chills and fever. The patient died two days later.

This case focused the attention of the attending doctor on the posible common etiology of erythroblastosis fetalis, which caused the death of that baby, and transfusion accidents in pregnancy. Such transfusion accidents are not the results of errors in blood matching, but are caused by the presence in the mother's blood of immune, intra-group agglutinins.

Landsteiner and Weiner had six months previously reported on an agglutinin which they had developed in rabbits by the injection of blood from *Macacus rhesus* monkeys. When tested with human bloods, this agglutinin demonstrated the presence of a new substance in the human red blood cells which they called the Rh factor (Rh from rhesus). Further studies have revealed that 86 per cent of the random population have inherited this Rh antigen in their red blood cells and 14 per cent do not have it. The antibodies which this antigen stimulates in a susceptible host are called the anti-Rh agglutinins. This Rh factor is inherited as a simple mendelian dominant much like the A & B factors which differentiate the four blood groups.

Dr. Philip Levine reports a series of 153 mothers who have delivered one or more babies suffering from erythroblastosis fetalis. Of these 153 women, 93 per cent were Rh negative in contrast to the expected 14 per cent of the random population.

A second example of the practcial application of this theory is the Rh negative patient (14 per cent of the population) who must receive repeated transfusions over a period of weeks or months. This patient must be protected from receiving blood repeatedly from Rh positive donors. It is probable that anti-Rh agglutinins are responsible for about 90 per cent of all intra-group transfusion accidents, after repeated transfusions or in pregnancy at the first.

A third example is found in transfusing newborn babies with erythroblastosis fetalis or more minor degrees of congenital anemia. In these cases it is preferable to use Rh negative blood rather than Rh positive because the affected infant, it has been shown, will maintain higher levels of hemoglobin and red blood cell counts. The anti-Rh agglutinins which still might be present in the baby's serum would hemolize the Rh positive blood cells the baby received by transfusion. Certainly, these critically sick infants should not be further insulted by transfusion from the mother, whose blood still contains large amounts of anti-Rh agglutinins.

ANOTHER TRANSFUSION DANGER

Two years ago a multipara, 32, was admitted to hospital with signs of ruptured uterus and dead fetus. A 10-lb. edematous fetus was delivered by cesarean section. The mother's anemia required transfusion—donor and patient group A, mass II; that evening a 2nd transfusion for shock. The next morning the patient was deeply jaundiced, hemoglobin had dropped from 60 to 46. A 3rd trans. was given. Partial anuria. By the 7th day hemog. 40, although no bleeding. A 4th trans. was followed by chills and fever, and death in 2 days.

This case[1] focused attention on the possibility of a common cause of erythroblastosis fetalis, which caused the death of that baby, and transfusion accidents in pregnancy. Such accidents are not due to errors in matching, but to the presence in the mother's blood of immune, intra-group agglutinins.

Six months earlier an agglutinin developed in rabbits by the injection of blood from the *M. rhesus* monkey, when tested with human bloods, this agglutin showed the presence of a new substance in the human red cells, which was called the *Rh* (from *Rhesus*) factor. Further studies have shown that 86 per cent of the general population have inherited this *Rh* antigen in their red cells, and that 14 per cent do not have it. This factor is inherited as a simple mendelian dominant.

Another report is made on a series of 153 who have been delivered of one or more babies suffering from erythroblastosis fetalis. Of these 153, 93 per cent were *Rh* negative (14 per cent in random population.

Special care should be taken in giving transfusions to women who have been delivered of dead fetus, or with a record of habitual abortions, neonatal deaths or transfusion reactions. In emergencies it is far safer to use pooled plasma.

1. F. D. Sinclair, Tulsa, in *Jour. Oklahoma Medical Association*, July)

THERAPEUTICS

J. F. Nash, M. D., *Editor*, Saint Pauls, N. C.

THE MANAGEMENT OF THE ASTHMATIC PATIENT

Routinely, a series of prescriptions containing iodide of potassium and Fowler's solution of arsenic is given to all patients who are not sensitive to these drugs for prevention and for relief. Sounds like Austin Flint, doesn't it? But it's the statement of an up-to-date authority on allergy, and hot off the press[1].

The first prescription contains 1½ drachms of the Fowler's solution, 4 drachms of the saturated

1. H. M. Davison, Atlanta, in *Med. Times*, Oct.

solution of potassium iodide in a four-ounce mixture. Any excipient may be used. One drachm in water three times a day after meals. The arsenic is gradually reduced, omitted from one prescription out of five, then included again. The amount of iodide is increased by one drachm each time the prescription is changed, until the patient's tolerance is reached, or until the amount reaches 16 drachms in the four-ounce mixture.

It is usually much easier to stop an attack of asthma just as it begins. Most patients have premonitory symptoms.

We now use to suit weight, and idiosyncrasies:

Tincture of belladonna
Syrup of ipecac
Sat. sol. potassium iodide.....aa. Dr. 1½
Chloretone ..... Gr. 40
Codeine ..... Gr. 8 to 10
Apomorphine hydrochloride .....Gr. 1/20 to 1/5
Some elixir of acetylsalicylic acid
(5 gr. to one drachm) .....Oz. 2
Excipient (any cough prescription) p.s. ad.....Oz. 4
Sig.—Drachm 1 in water p.r.n. for cough or asthma.

We ask the patient to try inhalations of adrenalin 1:100; produce a good vapor and to inhale deeply. Capsules of ephedrine, grains ⅜ to ¾ may be used together with appropriate doses of some of the barbiturates to prevent nervousness. For patients who consistently awaken with asthma at a certain time of night or morning, such capsules have been enteric coated, to dissolve in three to four hours after being taken.

For some patients with a 5-grain tablet of acetylsalicylic acid together with a teaspoonful of paregoric works like magic. Others find for themselves that inhaling the smoke from some powder or cigarette will give relief, and in such cases we advise the inclusion of this in the treatment.

For patients who suffer from hay fever and asthma together, the following prescription is useful:

Acetylsalicylic acid ..... Dr. 1
Amytal ..... Gr. 10
Ephedrine hydrochloride .....Gr. 3 to 4
Extract of belladonna .....Gr. 1 to 2
Codeine sulfate .....Gr. 0-4-6-12
Ft. caps. no 12
Sig.—One capsule every 3 to 6 hours as necessary for asthma or hay fever.

Patients coughing or wheezing or who anticipate an attack of asthma are taught not to move about, not to talk and not to eat, except for liquid foods in small amounts, and to go to bed with an empty stomach.

When necessary, we teach our asthmatics to use properly a hypodermic syringe to administer adrenalin to themselves.

Occasionally all that is necessary is the injection of ½ to 1 c.c. of adrenalin in oil. We usually give also an intravenous injection of 2 grams of sodium iodide with ½ gram of sodium cacodylate, given in the same syringe, and, if necessary, we use the combination of:

Apomorphine hydrochloride .....Gr. 1/120 to 1/100
Codeine sulfate .....Gr. 2
Adrenalin chloride.....(1-1000) Mms. 8 to 10
This is made up in about 1½ cc.. altogether, and one-third is given every 10 minutes until all is used. If it is not given in this divided way, it often produces nausea and vomiting.

In addition to this, the liquid prescription or the capsules already mentioned are usually given for the patient to take for a few days following.

For recurrent attacks of asthma which are not severe but annoying to the patient, we use one of the prescriptions, together with injections of sodium iodide and sodium cacodylate given every day, or every second or third day until relieved.

NARCOTICS AS THEY AFFECT THE PHYSICIAN

Extracts from a paper[1] by the U. S. Commissioner of Narcotics will prove of interest to many readers.

In Richmond, Virginia, recently, two doctors were supplying 215 drug addicts, most of whom were thieves preying on the citizens, robbing and stealing to pay doctors to take care of their addiction. Those doctors became so well known that even the prostitutes in Baltimore were going down to get the "ambulatory cure" from them.

We have a hospital in Lexington, Kentucky, where 1200 or 1500 drug addicts are being treated; cures run up to 35 per cent. There is a provision for the voluntary patient, and he can be entered there at about a dollar per day. The record is kept so secret that even our Bureau cannot get a copy of it.

If the man doesn't have any money, but obtains three affidavits, one, say from you and one from the preacher and one other affidavit, he can be admitted to the institution without charge.

We have in Washington a punch card system which records the purchase of narcotics by every physcian in the country. We can tell immediately, at any time, how much morphine or codeine any doctor has purchased. Where the amount is excessive, an investigation is started.

Today, with smuggling practically out of the picture, the pressure is on the doctor.

Morphine today is worth twenty times its weight in gold. An ounce of morphine in the underworld today will bring $2,000. It is a critical and strategic material. The Army requires opium alkaloids in its work just as much as it requires ammunition.

A small number of practitioners knowingly sell narcotics to underworld characters for as high as

1. H. J. Anslinger, Commissioner of Narcotics, Washington, in *W. Va. Med. Jl.*, Oct.

$5.00 a grain. We do not resort to entrapment in those cases. *The only time we investigate a physician is when we have information that he is selling to the underworld or when his purchase card shows that he is using an abnormal amount.* Sometimes it can be explained and we step out of the picture.

Addiction within the profession is handled as discreetly as possible without damage to reputation. I have handled several hundred cases in which the physician is now leading a normal life.

Two years ago, there was one addict in every thousand of the general population; today one in every three thousand. The addict who today is coming into custody does not have a habit; he has undergone a forced reduction treatment as the result of this scarcity of drugs.

The theft of doctors' bags has gotten to a point where it is really alarming; 130 drug stores are robbed monthly throughout the country.

We have enough, I think, to last for the duration. We started to buy opium when we saw war clouds back in 1937. Some hospitals have bought enough to take care of the situation for some twenty years. We required all that to be returned.

We are still getting opium from the Near East. If that source is closed, we have our plans made and at no time will the medical profession suffer from the lack of morphine for civilian or military needs during the war.

Year after year at Geneva at our opium conferences, we supplied enough evidence to show that the military authorities of Japan were using that weapon as a military instrument to soften up the Chinese, and they attempted it over here. One gang had sent enough heroin over here to supply 10,000 addicts for a year. It happened to be a New York crowd involved with Murder, Incorporated, and they are all awaiting electrocution.

Many of the Japanese ships that came here had narcotics. By leveling a fine of one dollar an ounce on opium, morphine, heroin we seized or purchased off the ship, we had enough fines rolled up to confiscate nearly all their ships, and the Japanese shipping companies had to take some method to stop that.

On a ship loaded with soybean tubs, a brother of the Emperor, Prince Chichibu, was aboard. We found heroin and fined the shipping company $100,000. Nearly every nation was suffering from this Japanese form of aggression. Egypt, for instance, had over a million addicts, and most of the drugs used were being dropped off ships in the Suez Canal.

Coast Guard vessels trailed these Japanese ships right into Honolulu or Seattle and trailed them out, because we knew that after they were trailed in they didn't throw narcotics overboard or throw them on the dock or secrete them some place, but on the way out they would do it; so for at least six years the Coast Guard has trailed all vessels in and out of port.

Before the Japanese adopted that policy, you never heard of a Japanese addict. Now there is a hospital in Nanking, China, with a thousand beds, all filled with Japanese boys who were garrisoned there as addicts. We drove this traffic from Germany to Switzerland, to England, to France, to Turkey, to Bulgaria, to Yugoslavia, and the Japanese took it over and that was the last stronghold of the illicit traffic until the war started.

I want to leave just one message with you, and that is if you practice legitimate medicine you need not even think of the law.

CARDIOLOGY

C. M. Gilmore, M.D., *Editor*, Greensboro, N. C.

ACUTE PERICARDITIS

The diagnosis being often missed is the reason reason for an excellent[1]

A classification which fits our requirements is

1. Nonpurulent type:
   a. Rheumatic fever
   b. Tuberculosis
   c. Uremia
2. Purulent type:
   a. Pneumococcic infection
   b. Streptococcic infection
   c. Staphylococcic infection
3. Irritative type (hemopericardium):
   a. Ruptured or oozing aneurysm
   b. Malignancy
   c. Hemorrhagic diathesis.

The urgency of diagnosis is great in the purulent type of case. In pneumonia, recrudescence after lysis, or unsatisfactory results after adequate care of an empyema should be viewed with suspicion. In septic conditions, either staphylococcic or streptococcic, accurate and repeated examinations should be made with pericarditis in mind.

The symptoms in fibrinous pericarditis are often slight, there is usually some pain early; with involvement of the central zone of the diaphragm, shoulder pain, hyperesthesia in the suprascapular are marked. The t. rarely goes above 101 to 102. The patient with purulent pericarditis may have fever with profuse sweats.

The pulse rate usually above 130, the pulse pressure reduced. The systolic blood pressure falls.

The r. is often 50, and out of all proportion to the t. and p. This with the cyanosis and the anxious appearance may come on with only a moderate effusion which develops rapidly.

1. J. P. Helmick, Fairmont, in *W. Va. Med. Jl.*, Oct.

Aphonia, dysphagia and cough are due to an enlarged noncompressible mass making pressure on the recurrent laryngeal nerve, the trachea, and either the lung or the diaphragm. Restlessness, insomnia, delirium, melancholia, suicidal tendencies, and even coma may occur, but when of the rheumatic type do not preclude complete recovery.

Hoover's sign—the left costal border not moving on inspiration in pericarditis with effusion. In children a large pericardial effusion may bulge in the lower left intercostal spaces with edema of the overlying skin.

We may find coarse, grating rub over the precordium with the patient sitting. With the accumulation of fluid, there will be a progressive lessening of the precordial impulse.

Keep accurate record of the size of the heart in suspicious cases, especially of enlargement to the left beyond the impulse and above the third left interspace.

Shifting dullness in any of these areas in change of position of the patient is evidence of great importance. The friction rub is to-and-fro; a new-leather sound seems close to the surface, intensified if pressure is applied to the stethoscope or on deep expiration, may be over any portion of the precordium and may be transient, although it does not always disappear with effusion. Levine stresses the similarity of the sound to the to-and-fro murmur of aortic insufficiency.

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

OFFICE UROLOGY FOR THE GENERAL PRACTITIONER

NOT ALL SPECIALISTS assume that it is a mortal sin for a general practitioner to do any practice in the field to which they have set up claim. A few have the good sense and good manners to say that a specialist's function is to diagnose cases of *unusual* difficulty of diagnosis, and treat cases of *unusual* difficulty of treatment, in a certain field.

A helpful article[1] based on this sound concept is abstracted. Much of the helpfulness comes from the author's frank expression of opinion that not every urologic condition should be referred to the urologist.

The office of any practitioner should be as sound proof as it is possible to be made. A great convenience is an extra door through which patients can be dismissed, and at least two small treatment rooms.

Patients have heard much of the accidental transferences of syphilis and gonorrhea, and they are suspicious of the infectivity of everything in the treatment room. Keep it perfectly clean and attractive. The regular clinical microscope answers every purpose and is simple to use. The gram stain is best for urologic investigation. Rustproof sounds head the list of required instruments. Tips below 20 F. may create false passages in the urethra. Use woven bougies where small instruments are needed. Use Kollman's dilators for posterior urethral and vesical neck work, never without a rubber cover. Filiforms with followers, with a male thread that can be fastened to either a catheter or Le Fort sound, are essential. Soft rubber or woven silk urethral catheters, the Foley bag catheter or Foley Alcock catheter is very useful as an indwelling catheter. Syringes, rubber finger cots, a penis clamp and a Valentine irrigating jar just about complete the urological equipment needed.

Rubber or woven catheters should not be boiled for any great length of time. All instruments may be sterilized by leaving in any antiseptic such as formalin solution. In office treatment rubber gloves are a nuisance. The free use of soap and water before and after handling patients is all that is necessary.

A holier-than-thou attitude is sure to rob histories of their most important points.

Examine the genitalia before urination. Any discharge should be microscopically studied. The patient should pass his urine into two glasses. If the second glass of urine contains no pus and the first glass does, the inflammatory process is distal to the vesical outlet except in the extremely rare case of ureteral block. If both glasses of urine contain pus, in other than gonorrhea cases, the problem requires further study of the upper urinary tract. Hematuria demands complete urologic survey.

A small quantity of each of the two glasses voided is centrifuged and, while the sediment is being thrown down, make usual urinalysis. By this time the sediment is deposited. Examine sediment a minute or two. If infection is suspected, the methylene blue stain of the sediment quickly indicates whether any bacteria are present. If bacteria are found, gram stain should follow. Motile bacteria in an otherwise negative urine suggest the colon as the possible source. Clumps of cocci, with or without pus, indicate careful studies of the emptying of the kidney pelves. Frequent urinatiton with crystals of calcium oxalate, suggest x-ray examination for stones. Inquire first about eating grapefruit, rhubarb, tomatoes, apples, and if he is constipated.

If urine is alkaline leave this litmus paper to dry out to determine whether due to earthy phos-

1. C. J. Imhoff, Oak Park, Ill., in *Miss. Valley Med. J.*, Sept.

phates (the blue will remain after the paper has been dried), or to urea-splitting organisms forming volatile ammonia (the litmus paper will revert to its original color when dry). Urea-splitting organisms such as bacillus proteus and some forms of micrococcus respond very readily to sulfanilamide therapy.

This study of sterility is only so far as it affects the male. Semen is obtained by coitus and withdrawal with ejaculation into a wide-mouth bottle; by coitus with condom after very carefully cleaning the condom; from the cervix by a loop or aspiration.

Count is made using white cell pipette, a 1:20 dilution, and ordinary ruled white blood count chamber. The semen is allowed to stand until liquefied, then shaken well and drawn into the pipette to the marker labeled 0.5; next the diluting fluid is drawn up to the 11 mark. This gives a dilution of 1:20, diluting fluid—5 per cent sodium bicarbonate and 1 per cent formalin in water. The pipette is shaken well three or four drops blown out and discarded, the next placed in the counting chamber. The number of cells counted are those in 1-10 or 1 cm. of diluted semen, x by 10, x by 1000 to find the number in 1 c.c. of diluted semen, x once more by the dilution used —20. Spermatozoa in normal individuals are 90,000,000 to 200,000,000 per c.c.

Less than 15 per cent of atypical forms, all other factors being up to standard, mean normally fertile. Spermatozoa are put into six groups: Normal, pyriform heads, microsperms, megalosperms, abnormalities of the acrosome, and miscellaneous types.

Two years of marital attempts at impregnation, with continuous failure, makes the diagnosis of sterility. The semen examination is the most important test on the male partner in an involuntarily barren marriage. Repeated tests should be made.

1. Endocrine causes: a. abnormalities of the testicles; b. pituitary deficiencies; c. thyroid dysfunctions; 4. adrenal dysfunctions.

2. History bilateral mumps with orchitis or of gonorrhea with its complications, general debilitating conditions, exposure to extreme heat, chronic intoxications, constitutional inferiority, injuries to generative organs.

Any individual who has allowed some real or fancied sexual difficulty to dominate his mind is deserving of our best care. Today, literature, human contacts, and amusements reek with pseudoscience.

And now to tear down a time-honored belief: There are no lesions of the posterior urethra or verumontanum which cause impotence, premature ejaculation, delay of sexual climax, or any other sexual ills. If sexual ability is restored by applications to the posterior urethra or verumontanum, it is the result of the breaking of a psychic inhibition.

In such cases of nocturnal enuresis fear and punishment should never be used. Thyroid extract cures in some cases. Treatment of phimosis, adenoids, enlarged tonsils, pin worms and the like may cure. Belladonna or ephedrine, in small doses, has proven beneficial.

Strictures of the urethra are usually amenable to dilation with filiforms and sounds. More satisfactory results are obtained with use of the Uthoff negative galvanic dilating urethral electrode which causes a dissolution of the offending fibrous stricture.

Bacteria flourish in an alkaline urine. The ketogenic diet is useful in ridding of the infections of proteus, streptococcus faecalis, aerobacter aerogenes, some staphylococci and bacillus coli. Many cannot tolerate the large amount of fat contained in the diet. Mandelic acid largely has replaced the ketogenic diet. Sulfanilamide acts somewhat better when the urine is alkaline and is particularly active against proteus ammoniac and vulgaris, aerobacter aerogenes, bacillus coli, streptococcus hemolyticus and pseudomonas; but has little or no effect on streptococcus faecalis and staphylococci. Sulfathiazole is potent against staphylococci. Caprikol is also very effective against most cocci.

In some inoperable carcinoma of the prostate cases, many with metastasis, results have been almost unbelievable. Many patients who found it necessary to take narcotics continuously have discarded their use. All others who were temporarily relieved, if at all, by x-ray, have found complete relief from pain, general feeling of well-being with the return of appetites, and improvement of their general strength. Weight gains have been recorded and a marked diminution in the size of the prostatic growth. The treatment used was stilbestrol by mouth in 1 mg. doses, two or three times a day, supplemented with an intramuscular injection of an oily preparation of the dihydro-diethyl stilbestrol twice a week.

A SYMPOSIUM IN *CLINICAL MEDICINE'S* ISSUE FOR SEPTEMBER

Nephritis and Nephrosis: The Pathology and Treatment of Nephritis

There are four types of nephritis[1] and four structures composing the kidney.

Glomeruli
Glomerulonephritis
(most common)

1. E. T. Bell, Minneapolis.

(a) Glomeruli too permeable (called nephrosis)
(b) Glomeruli blocked up—glomerulonephritis

Tubules
Tubular nephritis (rare)

Intestitial tissues
Interstitial nephritis, due to infections; invasion of renal tissue by pyelitis (pyelonephritis)

Blood vessels
High blood pressure due to arterial resistance (hypertensive vascular-renal disease)

These facts should be kept in mind: (1) Two-thirds of the functioning kidney substance can be lost and yet kidney function may not be impaired, and tests show normal results; (2) atrophy follows blocking, and where in the renal system—if a blood vessels, a glomerulus, or a tubule is blocked atrophy follows; (3) albuminuria is found many times without kidney disease (in only one hospital patient out of a hundred with albuminuria is serious kidney disease found).

The glomeruli are the filters of the blood. One-fifth of the total amount of blood traversing the kidney is filtered through the glomeruli, amounting to some 200 quarts, every day. Ninety-nine per cent of this filtrate is reabsorbed in the tubules; the remainder, including urea and other waste products, flows down the tubules into the kidney pelves and to the bladder.

The normal glomerulus is a multi-looped tuft of fine, branching capillaries, which permit the blood to come in contact with a single layer of endothelium.

Infections cause the cells lining the glomeruli to swell and block the flow of blood through the capillaries. This is a quiet process, which is discovered only if repeated urinalyses disclose a trace of albumin or a few red blood cells. The patient usually feels and looks well.

If the glomerulonephritis progresses to the second stage, the lining cells swell so much that most of the capillary blood flow is stopped. Symptoms: Oliguria, anuria, edema, high blood pressure; uremia may follow and the patient may die (5 to 10 per cent) in acute uremia. The acute form of glomerulonephritis may also lead to: Complete recovery (50 per cent); subacute uremia (death in from 3 to 6 months); active chronic glomerulonephritis (lasting 1 to 20 years with symptoms); or latent chronic glomerulonephritis, which may eventuate in active nephritis or, possibly, cure. Here, albumin is found only in the late afternoon or after exertion. You may help a patient by trying to prevent any infections, especially upper respiratory infections, and by keeping the patient in bed and warm during the course of such infections. Each infection leads to an exacerbation of the process and further scarring of the glomeruli. Small, scarred kidneys contrast with the large kidneys of acute glomerulonephritis. Nocturia and polyuria are frequently found in such patients, as the damaged kidneys must keep up a steady secretion of urine day and night to eliminate urea.

In nephrosis, the glomeruli are too permeable and albumin is poured out in the urine. As a result, the plasma proteins are low and edema appears. There is no change in blood pressure, no hematuria, no uremia. These patients, usually children, die of complicating infections.

Treatment: The intravenous injection of blood plasma will supply proteins and relieve starvation and edema.

Hematuria, in a child, does not mean acute glomerulonephritis. Often a youngster in previous good health has an upper-respiratory infection, blood pours through the capillaries and glomeruli thus showing that the glomeruli are not blocked, pathologic investigation reveals no serious damage to the glomeruli and recovery is the rule.

Tubular nephritis is rare. It is caused by bichloride of mercury poisoning, which causes necrosis of the tubule membrane.

Sulfathiazole and sulfapyridine may block the tubules by deposition of crystals, and uremia and death follow. Can be prevented by large amounts of fluids and measuring, every day, the amount of urine excreted. Oliguria is the first sign of tubular damage. Sulfanilamide does not cause such damage.

Transfusion with the wrong type of blood may cause the tubules to fill with hematin (especially if the urine is acid); anuria or oliguria follows. Alkali should be given before a transfusion, when possible.

Extrarenal uremia follows intestinal obstruction, bleeding into the bowel, and diabetic coma.

The Treatment of Nephrosis

Nephrosis is "the edema disease."[2] A very heavy albuminuria is always present. There is no hematuria, no blood urea increase, and no change in blood pressure.

The edema disappears spontaneously at times, following the renal crisis, in which the little patient appears tremendously edematous in the skin and body cavities. After the crisis is over, no edema will be found, and often there will be no albuminuria.

Some 50 per cent of patients are cured after one or more crises, or after one is brought on by high fever accompanying some infection.

2. C. A. Aldrich, Winnetka, Ill.

The patients are pale, but there is no anemia. There are no convulsions or other cerebral signs. Complications: (1) The peritoneal syndrome or pneumococcus peritonitis, whose onset is ushered in by abdominal pains and vomiting; (2) pneumococcus septicemia; and (3) lesions resembling erysipelas.

A high-protein diet is routinely used. Thyroid extract is of value if the patient is hypothyroid. Acacia solution, given intravenously, will dramatically clear up an edema, but must be used with caution because it is deposited in the liver.

Best treatment: 50 c.c. of lyophile blood serum (now obtainable commercially), injected intravenously, will cure a few patients. We are now using pooled blood serum, in doses of 200 c.c. daily for 5 days. If neither of these is available, give blood transfusions to the point of polycythemia. Antistreptococcus serum should be used in the treatment of nephrosis, especially if complicated by peritonitis. Sulfapyridine or sulfathiazole should be used for pneumococcic infections.

The resistance to infections decreases as the serum proteins are lowered; the antibodies are attached to the protein.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

A CLINICAL APPROACH TO THE PROBLEM OF BRONCHIAL ASTHMA

HERE[1] is light in a dark place.

Turnley has compared the process involved in the production of the asthmatic state to that of a shell load. The explosive charge is allergy; the propelling charge, infection; and the ignition charge, an excitant—pollens, epidermals, foods, climates, and noxious gases. Any one of these primers may set fire to the powder, causing the explosion called bronchial asthma.

The incidence of sinus infection is the same among nonallergic as among allergic individuals. The cases that respond to sinus surgery do not show permanent benefit.

Puberty, pregnancy and the menopause are periods when, in general, manifestations of an unstable autonomic nervous system express themselves. Corrective hormone therapy is indicated at these critical periods. Frequently high-carbohydrate, high-protein, low-sodium, high-potassium diets are of a distinct advantage, as is adrenal cortical hormone. (An injection of adrenalin produces an almost immediate increase of serum potassium probably mobilized from the liver.)

Of the excitants, the allergens are of greatest importance. A practical classification: 1) inhalants, 2) ingestants, 3) injectants, 4) contactants, and 5) physical agents. Under inhalants, in addition to the pollens, should be included epidermals (danders), house dusts, paints, face powder, orris root, molds, fungi; and occupational dusts—bakers, millers, dentists, druggists, carpenters, textile workers. Injectants include serums, pollen, and extracts. The contactants are silk, flaxseed, drugs, and glue; the physical agents, heat, cold, light.

The case of asthma with one etiologic factor is a rarity. The larger the number of offending agents the poorer the prognosis. It is not unusual for perennial cases of asthma with no exacerbations during the ragweed season to show improvement upon complete hyposensitization with ragweed extract.

Not infrequently allergic clinical sensitivity is lost perhaps by spontaneous desensitization resulting in a decrease in the number of factors capable of producing asthmatic attacks. This is most often seen in asthmatic children in whom the infectious process predominates and the attacks are nonseasonal with exacerbations during the winter months.

The value of skin testing has been overemphasized. A history requires average intelligence and coöperation of the patient, and diligence plus patience on the physician's part. Changes in environment, vacations and holidays sometimes furnish a valuable clue.

Skin tests for foods are notoriously unreliable. Here the use of elimination diets and basic diets which include only a few foods, usually nonallergic, are of value.

Environment tests are not emphasized sufficiently. Placing the patient in a dust-free room, removing to a hotel room or a hospital for a week or more, or a temporary change of occupation may solve the problem.

1. J. R. Kaufman, Charleston, W. Va., in *W. Va. Med. Jl.*, Oct.

THE TREATMENT OF TRICHOMONAS VAGINALIS VAGINITIS WITH THE LACTOBACILLUS

APPARENTLY the trichomonas organism is sometimes the easiest and sometimes among the hardest to conquer. Lactobacillus has its champions.[1]

The characteristic lesion is just behind the cervix—minute red spots. The diagnosis is made by removing a bit of secretion with the gloved finger from high in the vagina behind the cervix; mixing a drop of the secretion with a little normal salt solution and examining at once under low or high power. It is not necessary to stain.

Tichomonas infection should always be borne in mind in leukorrheal discharge. Green-soap may

1. Leo Brady & R. D. Reid, Baltimore, in *Ann. of Surg.*, 115: 840, 1942.

kill the organisms; no douche before examination.

Lactic acid and vinegar douches give relief but apparently are not sufficiently potent to completely correct the condition.

The diagnosis made, a bivalve speculum is introduced, the cervix inspected. The vagina is then dried with cotton and two Lactobaccillus tablets inserted behind the cervix. The vaginal orifice is then plugged with a tampon of nonabsorbent cotton. The patient returns on the next day and the tampon is removed, material taken from the vagina for microscopic study and the treatment repeated; itching much less.

Repeat treatment every 4 to 6 days. The patient is then told to insert one Lactobacillus tablet high in the vagina each night, take a douche only if she becomes uncomfortable from unabsorbed particles of the tablet coming out of the vagina and causing irritation. A white vinegar douche (5 per cent acetic acid) is recommended in a strength of from 2 to 4 tablespoonfuls to 2 quarts of water. Two such douches a week. This treatment is continued from 3 to 6 weeks, longer if necessary. If the organisms promptly disappear the tablets need be used only every other night. It is especially important that they be used while the patient is menstruating.

Endocervicitis is treated by a cauterization. All patients are given the usual instructions regarding toilet technic—clean, after defecation, from front backward. Advise against sexual relations. When the treatment must be continued for a longer period of time the patient is instructed to take a plain-water douche before coitus. Patients who are unable to come to the office for daily treatments must have home treatments carried out regularly.

HUMAN BEHAVIOUR

James K. Hall, M.D., *Editor*, Richmond, Va.

ALL ABOUT THE CRIMINAL

In Asheville the Annual Congress of Correction, sponsored by the American Prison Association, occupied most of the third week in October. My own participation in the program was slight, and I could not remain long at the meeting; and that I accounted my misfortune.

The American Prison Association has long been active. Why should it not be of somewhat ancient origin? Much of man's behaviour has been reprehensible since history has been recorded, and not infrequently man's conduct has been criminal. It is well for man to give consideration to the meaning of so-called criminal behaviour.

I have never attended a meeting at which I was more impressed by the earnestness of those in attendance than I was by those who assembled in Asheville from all over the United States in an effort to do something helpful for those imprisoned. I thought I sensed that those who presented the program and those who gave attentive ears to the presentations were willing to confess that they knew little about the meaning of so-called criminal conduct—little about the criminal and less, perhaps, about the meaning of his digressive behaviour. I heard little dogmatism and even less denunciation and condemnation. So much of the behaviour of the masses is now so diabolical that the lone robber and the impulsive murderer may be in less disrepute.

All the aspects of the criminal were considered during the meeting—his heredity, his early environment, his physical health, his early social and economic condition, his mentality, his educational opportunities, and his adaptive facilities.

One afternoon I attended the presentation of a division of the program that was devoted entirely to consideration of the psychopathic personality. Those individuals who are referred to as psychopaths are not always lacking in acquired knowledge and in intelligence, but they are poorly equipped with those attributes that enable them to interdigitate into the social structure and to get along with other mortals. Wherever such individuals are they are discordant and they constitute disruptive influences. When taken into the military branch of the service, for example, they cause trouble. The instruction afforded me by the discussion of the psychopath repaid me for the long journey to Asheville.

But consideration of the condition of the criminal did not occupy all of the time of the meeting. The law-making bodies that produce the statutes that are violated were put under the microscope; so were the so-called punitive methods, and there were detailed discussions of the methods made use of in prisons—to keep the prisoners under control and to afford them educational opportunities and fitness for that life to which most of them are returned.

I wish it had been possible for the meeting to have been largely attended by the public. Too little thought is devoted by the good citizen to the welfare of the citizen who is thought by society not to be good—the so-called criminal. But sometimes the criminal is a good citizen mislabeled My heroes—most of them—were once criminals in the opinion of many. So I said to those who heard me. And I named some of those heroes of mine—Socrates, Moses, Joan of Arc, Jesus, Robert E. Lee, Jefferson Davis, Stonewall Jackson, Zebulon B. Vance and O. Henry.

DENTISTRY

J. H. Guion, D.D.S., *Editor*, Charlotte, N. C.

THIAMINE HYDROCHLORIDE IN THE TREATMENT OF "DRY SOCKET"

Dry socket, a pain to dentist as well as patient, is reported to have been successfully treated by the parenteral administration of thiamine hydrochloride. For the past eighteen months, this investigator[1] has endeavored to determine the relative effectiveness of this therapy on all types of patients, from hospital clinics as well as from private practice. This paper is based on the findings in thiamine therapy in 130 cases of dry socket.

A very small increase in the actual concentration of the vitamin substance is needed in the tissues to overcome the severe pain of dry socket, which ceases permanently in 69 per cent of cases within from twenty to thirty minutes after initial injection of the drug.

The solution should be injected into the superior outer quadrant of the gluteus maximus muscle, although the trapezius or biceps brachialis may be used.

In some cases, when pain has been present for two or more days before therapy is instituted, the injection is best repeated within twenty minutes. If this does not bring relief—found to be the case in only five cases of the 130—double injection treatment the following day, preceding the thiamine administration by subcutaneous injection of 1 grain of codeine sulfate. For an unexplainable reason, if the pain is first obtunded with a narcotic and the thiamine hydrochloride injections are then given at twenty-minute intervals, the pain will not return.

In seven cases of the 130, the pain returned within twenty-four hours after the initial injection of the drug. In no case has the pain returned in its original severity. When it has returned and persisted, double injections at twenty-minute intervals the following day and then single injections for the next six to ten days are advisable. This procedure should be supplemented with oral administration of thiamine hydrochloride, 5 mg. daily for three days and 3 mg. daily thereafter for the duration of the parenteral treatment.

It has become the author's practice to give thiamine hydrochloride prophylactically to patients with visibly lowered resistance or with devitalized teeth, for from three to five days preoperatively. Five milligrams should be given orally each day before surgical procedure is undertaken and 100 mg. injected an hour or more before the operation. In utilizing this treatment prior to surgical procedure in thirty-eight cases of broken-down and devitalized teeth, not one case of dry socket has developed.

This method is recommended as a decided advance in the treatment of the pain of osteitis. It replaces the topical treatment consisting of placing sedative packings in the wound. With local packings relief, which is hardly ever more than partial, lasts only as long as the medicament remains active. Thiamine therapy, in the author's experience, affords complete elimination of pain in a great majority of cases and gives decided relief in every case.

1. J. P. Osterloh, D.D.S., San Francisco, in *Jl. A. D. A.*, Aug., 1942.

ORGANIC FACTORS IN THE ETIOLOGY OF MENTAL DISORDERS

(Abraham Wikler, U. S. Pub. Health Serv. Hosp., Lexington, in *Ky. Med. Jl.*, Oct.)

To summarize, it may be stated that mental disorders in general are the result of impairment of the integrative function of the cortex which normally channels, inhibits or otherwise handles instinctual, autonomic and conditioned stimuli (experience) so that an adequate adjustment to environment is achieved. When this integration fails, inadequate adaptation to environment results, and the patient is termed neurotic or psychotic, his behavior corresponding to previously conditioned responses (i.e. psychogenic) and to autonomic release phenomena rather than to the necessities of the environment. Furthermore, this impairment of integration may be due to physiological or structural changes in the cortex itself, or to disturbances in other centers functionally connected with the cortex, as for example, the hypothalamus, or to excessive strain on the integrating function comparable to situations produced in animals by frustration experiments. Hence the main point of attack should be the problem of determining why cortical integration failed, rather than the elaborate analysis of the particular pattern of the patient's psychogenic motivations.

RENAL FUNCTION TESTS

(J. H. Talbott, Boston, in *New England Jl. of Med.*, Jan. 29th)

If a subject with normal kidneys restricts fluids for 12 hours, urine specimens voided subsequently at hourly intervals show a sp. gr. of 1.020 or greater. A normal response to the subcutaneous administration of 0.5 c.c. of pituitary extract is a specific gravity of 1.020 or greater in urine samples collected every half hour for three or more hours. In extensive kidney disease, inability to concentrate above 1.014 is evident by either concentration test.

During the first 15 minutes after intravenous injection of 1.0 c.c. of phenolsulfonphthalein a normal person should excrete 25% of the total amount. In advanced renal disease, less than 5% may be excreted during this period.

Physical therapy is an important form of therapeutics which is slowly coming into its own and is gradually being wrested from the cultists. Even so, many physicians still do not appreciate the importance of physical medicine as a daily therapeutic aid in such conditions as atrophic arthritis and peripheral vascular diseases. With regard to the latter, simple home methods of physical therapy are the most important therapeutic modalities.—Yoder, of Washington, in *Jl. A. M. A.*, Aug. 1st.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

APPENDICITIS IN INFANTS AND SMALL CHILDREN

TIME AFTER TIME we see young children, even infants, who are not doing well and evidently suffering from some subacute, confusing abdominal disturbance, which often narrows down to a diseased appendix.

The appendix is located in an area where lymphoid tissue is abundant, and the fact that the appendix often contains a great quantity of lymphoid tissue makes it particularly susceptible to infection involving the cecum and the ascending colon.

In visualizing just what may occur in inflammation of the appendix we should remember that the appendix varies greatly in size and in length. Sometimes a very long appendix will have a very small opening into the cecum, and it is easily seen that a very slight inflammation at this area will close the lumen of the appendix at the cecal junction, and this will seal off the appendix from the rest of the intestinal tract, tending to inflammation which may extend throughout the mucosa into the wall of the appendix and on out to the peritoneal covering. Or, if the infection should remain localized, the same process might occur but in a localized area, and in this instance the entire trouble might be centered in one small area and produce a localized gangrene and perforation, at a point where there is a fecalith within the lumen of the appendix. Every doctor should be familiar with the fact that in any perforation of the appendix there may be found in the center of the area a fecalith which has evidently escaped from the appendix.

Varying, as the appendix does, so greatly in size and shape and in its position with relation to the cecum, we would naturally expect a variety of symptoms.

Another important factor in appendicitis is the blood supply which is carried by a single artery with its accompanying veins running in the folds of the mesoappendix. After infection has started there may be added hazard and danger due to the fact that there may be an obstruction or thrombosis of the blood vessels and extensive gangrene may result; or, in face of a more localized area of trouble, there may be a perforation, or gangrene with perforation.

In case the appendix is long but the blood supply good and the opening into the lumen of the cecum large, the appendix may become inflamed frequently, with pain, possibly slight nausea, stomach distress and a general upset of the gastrointestinal system. These attacks may come on every few days or may be months apart, and they may vary in severity from a very slight pain with slight gastric disturbance, possibly a little nausea and indigestion, or may become severe enough to cause pain, nausea and vomiting, and force the patient to go to bed. Even with these symptoms there may be no great increase in the leucocyte count and even the differential count may not be greatly increased. In many such cases there are merely recurrent attacks of vague abdominal pain, not severe, with occasional attacks of nausea. Sometimes there is only a mild digestive disturbance together with pain.

In this kind of inflammation of a retrocecal appendix the pain may radiate in a different way. The pain of acute appendicitis is usually first general and diffuse because the superior mesenteric plexus of the sympathetic nervous system supplies the appendix and the intestines and, therefore, the nerve-pain at first is referred to the peripheral extremities of these nerves. The pain usually becomes more or less localized in the right lower quadrant, less frequently in the epigastric region.

The pain may be intermittent, colicky, the tenderness in the right lower abdomen, or *wherever the appendix happens to be.* The tip of the appendix may lie in most any position in the abdomen—it has been found attached in the region of the left kidney—but the base is almost always fixed.

Later on there is rigidity of the right rectus muscle and if the infection continues the entire abdomen may become rigid, depending upon the amount of peritonitis present. This is due to the fact that these muscles receive their nerve supply from the lower intercostal nerves. The fibers of the superior mesenteric plexus come from the spinal system through the splanchnic nerves, which are to a great extent derived from the same source as the six intercostal nerves. The rigidity may be one of nature's efforts to protect this area from pressure or injury of any kind.

When nausea and vomiting ensue as a rule there is an increase in the leucocyte count, most in the polymorphonuclear cells, which is to be regarded as a fair index to the extent and severity of the infection.

During the course of the inflammation of the appendix the swelling of the wall of the appendix interferes with the venous return, and the spread of the infection down into the mesoappendix still further involves these blood vessels. A vessel thrombus hastens the progress of the gangrene or from it emboli may pass and set up infection in the lungs, kidneys, prostate—in fact, in any part of the body.

As White has pointed out, the disproportion between the length and the lumen of the appendix together with its dependent position and poor drainage still further predispose this structure to infection. Often a very slight infection or kink or twist may start trouble.

In children especially lymphoid tissue usually is far more susceptible to infection than in later life.

The perfringens, or gas bacillus, organism added to the ordinary bacterial agents is sometimes the cause of death in acute suppurative appendicitis. The more virulent organisms—such as the streptococcus—are another great cause of an infection which the patient may not overcome or may survive only with difficulty.

In infants only a few days old we may have acute appendicitis even with suppuration.

As a medical student I saw a small infant with an incarcerated inguinal hernia. After the hernia was reduced under anesthesia the professor of surgery remarked that it would hardly be worth while to look for appendicitis as we would not be at all likely to find trouble with the appendix in an infant of that age. Just then the little patient coughed and strained slightly and the end of the appendix protruded from the internal ring. Much to his amazement and ours, also, the appendix was on the verge of suppuration.

As infants can not tell us how they suffer it was necessary to observe them very closely in order to draw any accurate conclusion as to the cause of their distress.

Children may, of course, be suffering from a slight colic because of any one or more of the multitude of things that affect a baby's digestion. All of these things have to be taken into consideratiton. In the very mild cases of recurrent appendicitis diagnosis may be extremely difficult, but careful observation over a period of time and a history elicited by careful questioning of the child's mother will often aid greatly in making an accurate diagnosis.

White and differential counts are helpful, but we must remember that in small children the leucocyte and the differential counts are not so helpful as in adults.

In the diagnosis of appendicitis in infants and small children we must carefully rule out other things that might be causing the symptoms. In such cases where an appendix is removed we often find an inflammation worse than that anticipated, and the removal of the appendix as a rule relieves the symptoms and the child grows more rapidly, has far less gastrointestinal disturbance.

When the diagnosis of appendicitis is made, no matter how young the child, appendectomy is usually indicated. In the more severe infections immediate appendectomy is imperative. A general anesthetic may be given, but often, even in very small children, spinal anesthetic may be used, especially in cases with respiratory complications. The hazard is not great but with each hour of waiting where the inflammation is progressing there is a constant increase in danger.

Today almost everyone agrees that children should have the tonsils and adenoids removed at an early age—at least, before they start to school. Most all agree that boys should be circumcised at about the same time the tonsils are removed.

I hope that the day is not far distant when the appendix will be regarded in somewhat the same class as the tonsils and adenoids, and that children will have their appendices removed at an early age and thereby save them from much worry and danger in the future.

"PUSH FLUIDS" CALLED CLAPTRAP

(O. H. Wangensteen, Minneapolis, in *Minn. Med.*, Oct.)

When the patient hydrates himself by drinking water, satisfaction of the sense of thirst is, in the main, a fair criterion of the status of hydration. When, however, with an inlying duodenal tube in place, hydration is accomplished by parenteral methods, the most readily available guide to the status of hydration is the urine output and the specific gravity of the urine. A daily urinary output of 800 to 1000 c.c. with a specific gravity of 1.012 to 1.020 is ample assurance that the fluid requirements of the patient have been met. When a patient excretes, after operation, 350, 200 and finally less than 100 c.c. of urine on successive days, despite an adequate intake of fluid, the surgeon has grounds for anxiety. Most surgeons then give more and more fluid.

We have solved this problem by weighing all patients following major operations. If the preöperative weight has been exceeded and enough fluid has been given so that a satisfactory urine output could be expected and oliguria continues, continued administration of fluid will cause cardiac failure, pulmonary edema and death. Meaningless claptrap catch phrases as "push fluids" and other equally euphonious are but empty expressions. The weighing scale is more accurate than determinations of hemoglobin, hematocrit and plasma proteins. *I rely on the pre- and postoperative weights as the best guide to the status of hydration.* When a patient continues oliguric for several days and his weight has exceeded the preoperative weight by 3 to 4 per cent, the administration of more fluid will usually provoke pulmonary edema. *Next to regurgitation from the stomach into the lungs, the most common cause of postoperative pneumonia is probably administration of too much fluid.*

For the ordinary postoperative patient, five to nine grams of salt daily suffices. Salt lost through an indwelling duodenal tube averages five grams per liter; by perspiration three grams per liter.

Necessary fluid, beyond the requirements of sodium chloride given in physiologic saline solution, should be given as glucose solutions.

All patients having gastric suction must be hydrated by the subcutaneous or the intravenous route; proctoclysis is too uncertain. All such infusions should be given slowly, lest the work of the heart be increased.

CASE REPORT

Hemoglobin 10 Per Cent and Red Cell Count 640,000—with Recovery

Karl Schaffle, M.D., Asheville, N. C.

This case is reported as an example of a severe degree of secondary anemia without blood loss due to gastrointestinal disease, as described by Kracke. (The only case found in the literature by the writer which approximates such findings was one of pernicious anemia reported by Kracke,[1] the outcome of which was not stated.)

On August 28th, 1942, a white woman, aged 28, the mother of six children was found in a state of profound exhaustion. Her color was that of old parchment or yellow wax; her expression was anxious, and she was restless and very irritable. Immediate examination of the blood by Max Riesenberg, medical technologist, showed the hemoglobin to be 10 per cent, the red cells 640,000, a volume index of 0.6 per cent and 8 per cent reticulocytes; with anisocytosis, poikilocytosis, polychromatophilia and basophilic stippling. Transfusion, which had been advised by her previous physician and refused, was urged as imperative. Accordingly she was admitted promptly to Biltmore Hospital, where Dr. William S. Justice gave her 500 c.c. of her sister's blood which had been cross matched. Her temperature rose to 105 but subsided within twenty-four hours, and two days later the hospital laboratory reported the hemoglobin as 46 per cent and the red cell count as 2,000,000.

Physical examination gave normal findings throughout the chest and abdomen, no splenic or glandular enlargement and no tenderness of the bones. Lactation was stopped by a breast binder.

It was learned that the patient had made a visit to the central part of the state about a month previously where she developed diarrhea with seven or eight bowel movements daily for two or three weeks. She knew of nothing to cause this but remembered having abdominal pain after eating a raw tomato. She had seen no blood in the stools and none was found during the hospital stay; neither were any parasites or ova found. No serious previous illnesses were reported but her former physician said that he thought she had been anemic for some time and that at the birth of her last child, eight months before, there had been considerable hemorrhage. She denied abortion and gave no history of hemoptysis or hematemesis, or of the taking of coal-tar or sulfa drugs. Unfortunately, as she was quite uncoöperative, a gastric analysis was not done.

After a week in the hospital with forced feeding, liquids and heavy dosage of iron and multiple vitamins daily, another transfusion was started, with the father as a donor; but the reaction was so violent, consisting of generalized pains and a temperature of 105, that it was stopped after 100 c.c. had been given. The patient improved, however, and was discharged a week later. Subsequent blood examinations were as follows:

Sept. 18th—hemoglobin 58%, red cells, 2,303,000; white cells, 7,000.

26th—hemoglobin 58%, red cells 3,450,000; white cells, 8,000 with a normal nuclear index.

Oct. 12th—hemoglobin 79%, red cells, 4,000,000; white cells, 8,600—eosinophils, 3%; stabs., 2%; segments, 63%; lymphocytes, 29%; monocytes, 3%. Erythrocytes were normal, with a nuclear index of 31.5.

Since September 26th, the patient has felt quite well, gained weight and has resumed her household duties. In appearance and behavior she is an entirely different individual.

1. Kracke, R. R., *Diseases of the Blood*, 2nd Edition (1941).

INFECTIOUS MONONUCLEOSIS

(H. H. Ash & J. L. Arbogast, Lafayette, in *Jl. Indiana Med. Assn.*, Oct.)

In the 21 cases studied, the age extremes are eight and 38 years, with 13 males and eight females.

It may appear as follicular tonsillitis, meningitis, or even as acute leukemia. It is this variety that makes discussion of symptomatology difficult. The onset was gradual in all cases excepting one which had generalized aching and sudden malaise.

The earliest blood change in the total or differential w.b.c. was noted as early as one day, as late as 14 days. Mononuclear cells varied from 37 to 86% (averaging 70) as early as three days after onset to as late as 30 days.

Cultures and inoculations have proved disappointing. There seems to be no specific therapy. Isolation is debatable, except during epidemics, and common sense must guide convalescence. Unless protracted or debilitating with fever, glandular enlargement or abnormal leukocytic counts do not contraindicate resumption of modified activity.

A series of 21 cases of infectious mononucleosis, occurring within a two-year period in one hospital, located near a large university, is reported. The commonest clinical features are sore throat, malaise, adenitis and fatigue. Leukocyte changes were characteristic in all cases, the diagnosis being confirmed in 15 days by the Paul-Bunnel sheep-cell test. In this review only three mild splenomegalies were noted, and there was a tendency for the diagnostic cell titer to be delayed in appearance. The importance of conjunctivitis as a symptom is stressed. The association with Vincent's appears interesting.

Agar and the War

The war has cut off importations of agar-agar, which normally come from Japan. The War Production Board has taken over all stocks of agar in order to meet the requirements for bacteriologic culture media for the Army, Navy and civilian hospitals and laboratories.

This W. P. B. control of agar stocks made it necessary for Mead Johnson & Company to discontinue the manufacture of "Pectin-Agar in Dextri-Maltose," a product which has been used by the medical profession for the treatment of diarrhea in infants.

Fortunately, Mead Johnson & Company have another product, Casec, which gives good results for the same purpose. Physicians who are not familiar with Casec are invited to write for samples and descriptive literature to Mead Johnson & Company, Evansville, Indiana.

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Offerings for the pages of this Journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage.

As is true of most Medical Journals, all costs of cuts, etc., for illustrating an article must be borne by the author.

CONSCRIPT DOCTORS OF MEDICINE WITHOUT CONSCRIPING OTHERS? NEVER

THERE's a lot being said and written about assigning doctors here and there over the country wherever some bureaucrat decides they are needed. A book has been written, with a foreword or preface by an ex-president of the A. M. A., which says flatly that this is going to be done.

I don't believe a word of it.

I am heartily in favor of conscripting (or drafting, if you prefer the term) every man, woman and child between the ages of 18 and 65 and assigning them to duties of most help in the present crisis. This is no new thought of mine. This idea was advanced by me in a meeting of the veterans of Base Hospital 65, held at Greensboro more than fifteen years ago. On motion of Col. John Wesley Long, M.D., it was voted that the address be published; but in preparing the ballots for voting on the motion the address was torn to bits, thus furnishing an apt illustration of a contention of O. Henry (himself a native of Greensboro) that every project carries within itself the seed of its own destruction.

At that ttime we were not at war; but recollections of the times when the Paris editions of the London *Daily Mail* and the New York *Herald* had carried accounts of strikes in this country preventing the hauling of food and munitions for the American Expeditionary Force to the ports, or preventing their loading after they had been delivered to the ports, were fresh in mind.

By all means let us draft the full man- and woman-power of the country, and put it to work, and see that it stays at work, where it can best serve the purpose of winning the war and the peace with the least expenditure of life.

Anybody who knows anything, knows that forty hours is no week's work. We all know that those working at heavy manual labor suffer no ill effects from working sixty hours a week. We know that the forty-hour week was foisted on the country by representing it, not as a week's work, but as a means of spreading the amount of work available over a larger percentage of those needing work.

A whole lot of us had about as soon live in a world run by Hitler, Hirohito and Mussolini, as in a world run by John L. Lewis, William Green and Philip Murray.

Doctors of medicine can supply more reliable information on proper work hours than can members of any other group. We know how long a healthy man can work without injury to his health. We know what constitutes work. We know that far

the greater part of the work of the world, the actual *labor*, is done by men and women who have nothing to do with the organizations calling themselves "Labor unions."

President Roosevelt said many months ago, in his speech declaring a national emergency, that strikes would not be tolerated. He keeps right on tolerating them. The country is sick and tired of our young men being killed by the thousands, whose lives would not be lost if the President would see that his pet "Labor unionists" work half as hard and half as long as the men in uniform.

Some months back the president of the University of North Carolina sat on the stage when Philip Murray shouted that he would cut off his right arm for his country. An utterly silly, asinine proclamation. And at the time the president of the University of North Carolina proclaimed Murray a patriotic citizen! Nobody wants him to cut off his right arm. Everybody outside high politics and labor-unionism wants him and all labor-unionists to work their right and left arms for at least sixty hours a week—preferably seventy.

Everybody knows we could get along not only as well, but a whole lot better, with 75 per cent of our supply of lawyers out of practice entirely. Here's a nomination of that percentage as munition manufacturers and food growers.

By all means let us have drafting of every man, woman and child from eighteen to sixty-five; have them placed where competent persons (not politicians) say they can render most service toward winning the war with least loss of life; have them shot if they do not show up for duty or do not discharge their full duty, just as though they were soldiers or sailors at the front.

CHIEF PSYCHIATRIST OF LOYALIST SPAIN TO LECTURE OVER WHOLE OF THE UNITED STATES

Dr. Emilio Mira, Director of the Neuro-Psychiatric Services of the Loyalist Forces in the Spanish Civil War, has arrived in this country from Buenos Aires for a nation-wide tour of lectures and conferences on war psychiatry and the techniques of German psychological warfare in Spain and South America. The New York Academy of Medicine is sponsoring the lectures.

This eminent psychiatrist will confer with our high officials before beginning his lecture tour of key cities throughout the nation.

His observatons of Germany's propaganda methods in Spain and South America place Dr. Mira in position to understand their effectiveness and methods of combating them.

On behalf of the Salmon Committee on Psychiatry and Mental Hygiene which each year selects a distinguished specialist in psychiatry, neurology, or mental hygiene as lecturer, an invitation is extended to all members of the medical profession and their friends to attend.

Dr. Mira will lecture before medical, university and military groups in half a dozen states. He will address the Boston Society of Psychiatry and Neurology on November 19th, and will lecture in New Orleans on November 27th. Flying to San Antonio on November 24th he will speak at the U. S. Army School at Randolph Field. He will also speak in Galveston and Houston. Other lectures are planned for Toronto and Philadelphia.

Speaking on Psychiatry at War Dr. Mira will discuss his experiences in the Spanish War, with special emphasis on his findings concerning fear and anger reactions in war time and an outline of a new technique for controlling and detecting fighting power in soldiers and fliers which he originated in Spain, and used later in England.

The Spanish psychiatrist has been invited to hold a series of special conferences in Washington on November 9th and 10th. He will confer with members of the Adjutant General's office, officers of the United States War and Navy Departments, officials of the Army Air Forces, surgeons and psychiatrists from the Board of Naval Aeronautics and officers of the Special (Morale) Branch.

Born in Cuba, he was educated at the University of Barcelona and the Central University at Madrid, where he received his medical degree. He has studied in Germany, France, Switzerland and England. Dr. Mira is the author of textbooks on pschiatry and psychotherapy. He has edited several psychiatric journals and has contributed to the journals of three continents. At present he is the Spanish representative of the International Congress of Psychology.

The potential value of such instruction is too great to be estimated. We shall need it in bringing the war to triumphant conclusion. We shall need it much more in imposing terms whereby to insure permanent peace.

This journal earnestly hopes that Dr. Mira is not one of those deluded persons who believe that the Germans are essentially good folks who have been cruelly imposed on by bad leadership.

This journal earnestly hopes Dr. Mira will tell his audiences, official and unofficial, that Hitlerism and Germanism are one and the same thing; that the world can never be at peace for more than a few years in succession so long as there are living in it any considerable number of Germans and Japanese of war age.

For nearly a hundred years Germans have been taught that they are a superior race, chosen of some sort of god to rule the world. The Japanese are dominated by the same idea.

We should make up our minds right now that there shall be no cessation of this war until provision has been made, surely, that every German and Japanese man, woman and child be sterilized.

It can be done painlessly and harmlessly in a few minutes by exposure to x-rays. It must be done. The same procedure may well be in order for Italians and Hungarians.

As Professor Hooton, of Harvard, said five years ago: "In Germany the obsession of race has grown from a morbid inferiority complex to a national psychosis. . . . . An important element of their historical and political education is the conscious effort to build up in their citizens a physical ideal of the traditional German, tricked out in Nordic racial lineaments and replete with all the heroic virtues of a superman." This effort has succeeded, it being understood that the German idea of the *heroic* carries no concept that non-Germans are entitled to any consideration whatsoever. Indeed the modern German—whether he or she be field marshal or shoemaker, princess or chambermaid—is that it is the duty of Germans to slay or enslave to the most menial tasks all non-Germans. The same is true of the Japanese. There can be no peace worthy of the name until they or we are destroyed. Ergo, we must destroy them, root and branch. Sterilization of every German and Japanese man, woman and child is better than they deserve; but it will serve.

SOME OF CHEMISTRY'S GREAT CONTRIBUTORS TO MEDICINE

THE WORD *chemistry* is derived from the Arabic (al)*Kimia,* the occult art; Mid-Latin *chimia,* the secret art of procuring gold. Taking into consideration the remarkable physical manifestations attending certain chemical reactions—the production of beautiful colors by the pouring together of two colorless liquids, the generation of heat oftentimes with violent combustion, the fierce burning of sodium thrown on water—these and many other phenomena incident to chemical investigation, plus hope of transmuting base metals into gold, would lure the curious, the superstitious, the avaricious and the greedy-for-power. Did I have out anybody?

Always a large part of medicine has been chemistry. Until recent times it was not uncommon in this country, and today in England it is the habit, to say chemist's shop rather than drugstore.

For practically all our agents for the prevention or cure of disease, surgical measures excepted, we are indebted to chemistry. And where would surgery be but for nitrous oxide, chloroform, ether, the regional and local anesthetics, and the thousand-and-one antiseptics and dyes for bacteria identification—every one of them a gift of chemistry?

Great as was the contribution to medicine of mercury, of iodine, of morphine, of quinine, of arsenic, of iron, of emetin, of thyroxin, of adrenalin, of the vitamines, of the mercurial diuretics; the contribution of the sulfonamids is in a class by itself.

Ever since the discovery that bacteria cause disease hope has been entertained of finding an agent or agents which would kill or cripple these bacteria *in vivo.* However, with the passing of the years, and failure after failure of attempts to discover or elaborate such an agent, hope of success had become dim indeed, wellnigh nonexistent.

Then, almost by accident, was the discovery made that led to the realization of medicine's age-old yearning and striving to control disease processes—many of them—by the administration of chemical agents! It was an accident that the effect was produced. It was no accident that the trained mind recognized the importance of that it had observed, and the implications thereof.

In its results its the nearest to a miracle that has been wrought in our time.

WHAT SULFONAMID TO CHOOSE AND HOW TO TO USE IT

Note: For much of the assembling of these data acknowledgement is made to Sharpe and Dohme's *Seminar, for* August.

In pneumococcic pneumonia, sulfadiazine finds one of its most important uses. The initial dose is 0.10 Gm. per kilogram, then 1 Gm. q. 4h until the t. has been normal for 3 days. If there is difficulty in giving enough by mouth to raise the blood concentration to desirable level, give the sodium salt intravenously—5 per cent in sterile distilled water, taking care not to allow any of the material to leak into the perivascular tissues.

In hemolytic streptococcic infections the initial dose is 0.05 Gm. per kilogram, the total daily dose 0.10 Gm. per kilogram, 6 doses q. 4h. until t. is normal for 5 days.

In severe infections the initial parenteral dose of sodium sulfadiazine is 0.06 Gm. per kilogram, followed by sulfadiazine 0.15 Gm. per kilogram per day orally, 6 doses q. 4h. until t. is normal for 5 days, the dose then slowly decreased until the patient is ambulatory. If the patient is so ill that only parenteral therapy may be used the same initial dose of the sodium salt is given, this followed by .05 Gm. per kilogram daily.

In the treatment of gonorrhea the initial dose is 3 Gm. followed by 1 Gm. q. 6h. in 5 days, a change in therapy should be made. Excellent results have been obtained with as little as 2 Gm. per day given in divided doses.

Succinylsulfathiazole given orally in 250 cases had a marked bacteriostatic action, particularly

on the colon bacilli of the intestinal tract. Within 1-7 days the feces become semifluid, small in bulk, and relatively odorless. The *B. coli* count dropped from 10,000,000 to less than 1000 per gram of wet stool. Used preöperatively by reducing the infectivity of the intestinal contents the chances of incurring peritonitis are lessened. By its postoperative use a low bacterial count of the intestinal contents has been maintained, with the result that there is little distention and gas pains are strikingly diminished. Nausea and vomiting have been much reduced, and deep abscesses and peritonitis have not been encountered following extensive operations on the large intestine when adequate preparation has been carried out. By administering the drug to patients at home for 3-5 days prior to hospitalization, the patient may be saved considerable expense. Administered postoperatively its use tends to shorten the period of hospitalization, an additional important economic factor.

Succinylsufathiazole has been reported to be of value in the treatment of bacillary dysentery.

As a part of the regimen of preparation for all abdominal operations, unless there be complete intestinal obstruction, it has been recommended that the patient be put on a low-residue diet, and receive an initial dose of 0.25 Gm. per kilogram maintenance doses of 0.25 Gm. per kilogram. No enemata or purgatives are to be used.

PRURITUS ANI AND VULVAE

(R. Seletz, Los Angeles, in *Western Jl. of Surg., Obs. & Gynec.*, 50: 289, 1942)

Most effective: The skin is treated with a topical application of Berwick's dye followed by a coating of compound tincture of benzoin in the office two or three times a week, even on the inner surface of the labia, but not the vulval or anal mucosa. Gentian violet gives the best results in treating the vaginitis. The patient is instructed to keep the parts dry and to use zinc oxide ointment as a constant coating, this removed before application of the dye. As soon as the skin is intact, Whitfield's ointment, ¼ strength—the patient instructed to continue its use long after the symptoms have subsided.

Any other cervical or uterine morbidity that is productive of abnormal discharge or excessive mucous secretion must be corrected to prevent the harboring of yeast organisms in the vagina.

Changes in diet, correction of constipation, measures to stimulate hemopoietic function and reticuloendothelial response—all these secundem artem.

CIBA AWARDED MINUTE MAN FLAG

In recognition of more than 95 per cent participation in the federal payroll savings plan, a Minute Man flag has been presented to the Ciba Pharmaceutical Company of Summit, N. J., by the United States Treasury Department War Savings Staff.

Three divisions of Ciba which had attained a 100 per cent participation in the payroll savings plan were presented with Minute Man banners by Mr. Brodbeck.

CHUCKLES

Son: "What is a counter-irritant?"

Father: "Must be someone who has been shopping all day and hasn't bought anything."

John: "Well, I understand Jane refused you."

Jack: "No, not quite as bad as that. She just said that a B-13 priority rating is the best she can give me at present."

A farmer visited his son's college. Watching the students in a chemistry class, he was told they were looking for a universal solvent.

"What is that?" asked the farmer.

"A liquid that will dissolve anything."

"That's a great idea," agreed the farmer. "But when you find it, what are you going to keep it in?"—*San Jester.*

First-Aid Instructor: "Suppose the victim was bleeding profusely, had a broken leg, was extremely pale and showed no pulse. What would you do?"

Class-member: "Well, sir, if I could find a spade and a soft spot of ground, I'd bury him."

At the Children's Hospital Johnny was the terror of the ward. He was always in trouble. One day a weekly visitor, who knew his character, said to him:

"Johnny, if you are good for a week, I'll give you sixpence when I come back."

A week later she stood before Johnny's bed again.

"Well," she said, "I'm not going to ask the nurses if you have behaved. You must tell me yourself. Do you deserve the sixpence?"

There was a moment's silence. Then from among the sheets a small voice said: "Gimme a penny."

Traffic sign in a Pennsylvania village: "Slow. No hospital."

Behind the desk of the lecture hall there is a hook on the wall with the inscription: "Reserved for faculty members only." Somebody added with chalk: "Can also be used to hang coats."

On phone, anxious mother of a three-month-old female: "This morning, while bathing baby, I noticed a swelling just above the gentiles." Examination disclosed an inguinal hernia.

A mother brought her 12-year-old boy. I had not seen them since the boy was 2 years old. "Would you remember Henry?" "Well, after all these years, I'm afraid an introduction would be in order." "Doctor, that's the boy who had only *one* scrotum." A still undescended left testicle.

The mother explained in broken English that the boy had had a fever and pain in his back for the past week. T. 104, possibility of acute nephritis. Antipyretic tablets, repeating instructions as to administration, also to apply ice bags to his head; and told to save all the water that he passed in 24 hours and bring it to office.

The next day the mother came with a heavy bundle under each arm. "Here it is, doctor, all of it."

I removed the wrappings and saw two one-gallon bottles filled with clear fluid. Amazed, I said: "Did he pass all of this?"

Very proudly she answered: "Yes, I saved all the water after the ice melted in the ice bags."

NEWS

EASTERN N. C. TUBERCULOSIS SANATORIUM

Governor Broughton officially dedicated the recently completed Eastern North Carolina Tuberculosis Sanatorium at Wilson on September 23rd. The hospital will open for patients this fall. This sanatorium is under the same board as that at Sanatorium and the Western North Carolina Tuberculosis Sanatorium at Black Mountain. Members of the hospital staff include Dr. H. F. Easom, superintendent; Dr. John E. G. McLain, resident physician; Miss Nelle Smith, superintendent of nurses; Miss Florence Pittman, dietitian; Miss Mary Harvey Ruffin, assistant dietitian; Vance Macy, x-ray and laboratory technician; Frank Whitehead, engineer, and C. C. Moss, purchasing agent.

The Fall Meeting of the NEUROPSYCHIATRIC SOCIETY OF VIRGINIA was held at University Hospital, Charlottesville, October 14th.

Program: Experiences in Military Psychiatry, by Major Seymour J. Rosenebrg, Camp Lee, Va.; Hysterical Bent-Back Soldiers (with movies), by Lieut. Col. Percy G. Hamlin, Camp A. C. Ritchie, Md.; Neurological and Psychological Findings in Insulin Shock, by Dr. H. A. Meyersburg, Charlottesville; Primitive Thinking, Dr. C. G. Holland, Charlottesville; and A Presentation of Three Cases of Supposed Encephalitis With Autopsy Findings, by Dr. David C. Wilson, Charlottesville.

PRIZE ANNOUNCEMENT

A prize of $100 is offered by the Menninger Foundation for Psychiatric Education and Research for the best suggestion for a window display in a New York bank presenting the uses and purposes of psychiatry. The window is thirteen feet long, six feet high, and its deepest point about eight feet; it curves so that it is narrower at the ends. It will be seen chiefly by laymen and hence the display should be in the nature of an educational theme, convincingly and graphically presented. It should dramatize the way in which psychiatry can be or is being useful in the present war emergency and/or in peace time.

The judges will be Dr. George Stevenson, Director of the National Committee for Mental Hygiene, Mr. Albert Lasker, of Lord and Thomas, and Dr. Lawrence Kubie.

Ideas should be submitted in detail, preferably with drawings or diagrams, directly to Dr. William C. Menninger, Director of The Menninger Foundation, Topeka, on or before January 31st, 1943.

DR. MARINA HUGH HENRY, for the past few years a member of the staff of the Guilford County Tuberculosis Sanitarium, has gone to Chapel Hill to take over the practice of Dr. John S. Hooker, now a major in the Medical Corps, U. S. Army.

MARRIED

Dr. Wilbur Eugene Fisher, of Washington, Pennsylvania,, and Miss Virginia Lucile Hamilton, of Farmville, Virginia, were married on September 17th.

DIED

Dr. Robert French Mason died at his home in Washington and was buried at Charlottesville, Va., October 31st. Dr. Mason practiced medicine in Washington for many years. He was a native of Charlottesville and a graduate of the University of Virginia.

Dr. Waverly S .Tucker, 53, formerly of Richmond, died at his home at Newark, New Jersey, October 9th. Dr. Tucker was a graduate of the Medical Colege of Virginia in 1915 and served an internship at Grace Hospital, Richmond.

Dr. S. P. Oast, Jr., surgeon, who served with the American and French armies in World War I, died at his home at Portsmouth, Va., October 16th. Dr. Oast was a graduate of the Universities of Virginia and of Pennsylvania.

Dr. G. S. Withers, 60, died at his home at Davidson, N. C., October 20th. Dr. Withers graduated at the North Carolina Medical College in 1914 and had been actively engaged in practice in Davidson since that time. He is survived by his wife, two sons and a brother, Dr. J. J. Withers, of Davidson.

Dr. L. S. Foster, 86, died at Williamsburg, Va., Sept. 23rd, following an illness of several weeks. He was educated at Randolph-Macon College, New York University and the Royal Infirmary of the University of Edinburgh, Scotland.

Dr. Foster practiced medicine in Mathews County for a number of years and was for a time superintendent of the Mathews County Schools. He was a former member of the State Board of Education, State Medical Board and the Board of the Eastern State Hospital, of which institution he was for a time superintendent. Dr. Foster was a charter member of the Tri-State Medical Association.

Dr. Lewis Booker, 55, died September 29th at his home in New Castle, Delaware. Dr. Booker was a native of Richmond and a graduate of the Medical School of the University of Virginia in 1910.

Dr. Claude Marshall Lee, a grandson of Chief Justice Marshall and a grandnephew of Robert E. Lee, returned to the United States in August on the repatriation ship, Gripsholm. Dr. Lee is founder and director of St. Andrew's Hospital in the inland city of Wusih. Dr. Lee recently spoke to a number of groups in the diocese of Virginia, telling of his experiences in China.

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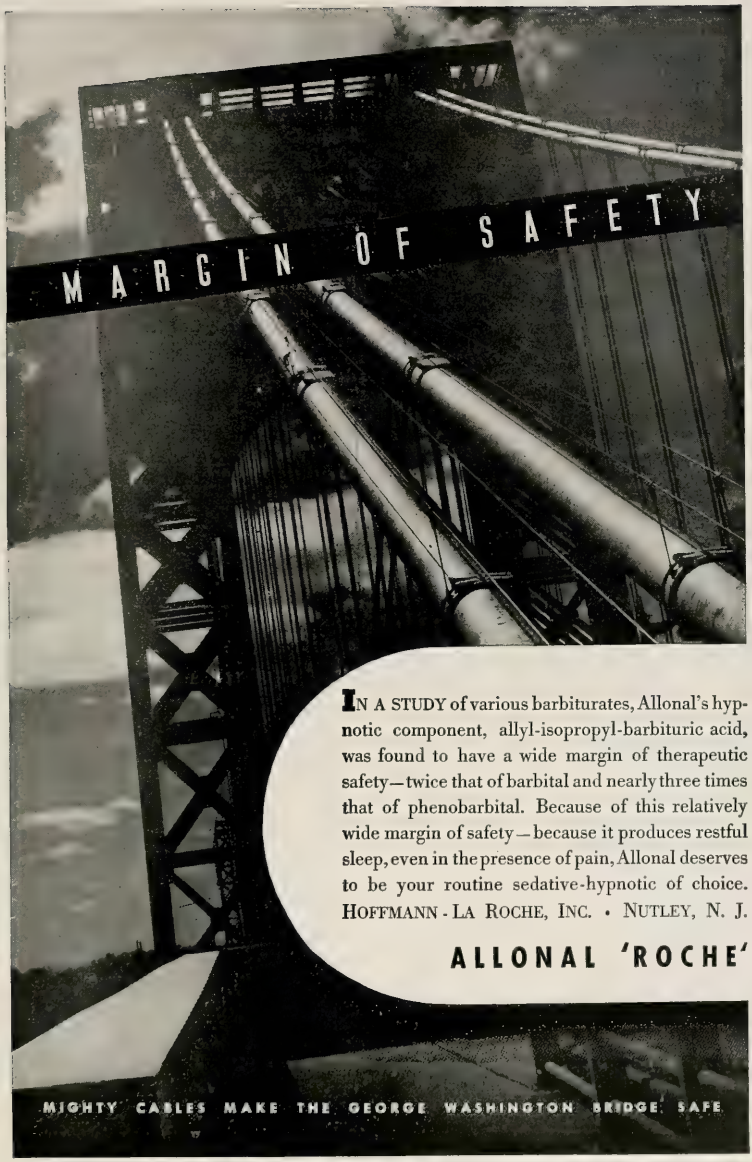
Dr. Morris Belkin, who obtained his Ph.D. from Yale, is the latest addition in the Department of Pharmacology, where he is an instructor.

Dr. William Prout, officially acting-director of the Department of Pharmacy, attended the convention of the American Pharmaceutical Association in Denver and addressed the Section on Practical Pharmacy.

Dr. R. E. Remington, head of the Food Research Department, who has been sick off and on during the summer, is now off at Duke University undergoing thorough physical examination.

On October 12th, Dr. Kenneth Lynch, head of the Pathology Department, delivered an address entitled Abnormal Chorionic Growth before the Columbia Medical Society.

Dr. John Arthur Siegling, orthopedic surgeon, after several years residence in Illinois, where he was in charge of the department of bone and joint surgery at the Carle Clinic at Urbana, has returned to Charleston to practice. He will be on the faculty of the Medical College in orthopedic surgery.



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Dr. Sydney Britton, professor of physiology, attended a conference on adrenal physiology called by Dr. Frank Fremont Smith, secretary of the Josiah Macy, Jr., Foundatiton, at the Beekman Hotel in New York City on September 9th and 10th.

Dr. Tiffany Johns Williams, professor of obstetrics and gynecology, attended the meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons at Hot Springs on September 11th. He presented a paper on "Hydatidiform moles and associated tumors of the Chorion."

Dr. Vincent W. Archer, professor of roentgenology, attended a meeting of the American Roentgen Ray Society in Chicago from September 15th through the 18th. He was chairman of the scientific research committee, member of the executive council and read a paper on "An ocular test for sensitivity to diodrast prior to intravenous urography."

On October 12th Dr. Cecil K. Drinker of the Harvard University Public Health gave the annual Alpha Omega Alpha address. His subject was The Genesis and Resolution of Lung Transudates and Exudates as Viewed by a Physiologist.

On September 24th Dr. Vincent W. Archer addressd the Valley of Virginia Medical Society in Staunton. His subject was The Care of Patients with Advanced Malignancy.

BOOKS

DR. COLWELL'S DAILY LOG FOR PHYSICIANS: A Brief, Simple, Accurate Financial Record for the Physician's Desk. *Colwell Publishing Company,* Champaign, Ill. $6.00.

This book is all that it claims for itself. It is doubtful if any doctor has ever tried it over the many years it has been put out and not continued to purchase and use it year after year. Any doctor busy in practice will save the price every week in charges he forgot to make; and, when he comes to make up his income tax report any doctor will bless the day he bought the Daily Log.

WHEN DOCTORS ARE RATIONED, by Dwight Anderson, Director Public Relations, Medical Society of the State of New York, and Margaret Baylous, Therapist, Charleston General Hospital, Charleston, West Virginia. *Coward-McCann, Inc.,* New York City. 1942. $2.00.

The authors say flatly that doctors are to be rationed. A doctor recently president of the A. M. A. says they have made a valuable contribution. Maybe doctors will be assigned to certain localities and made to spend the time of the duration of the emergency there. It's hard to see how that can be done without drafting them into the military ser-

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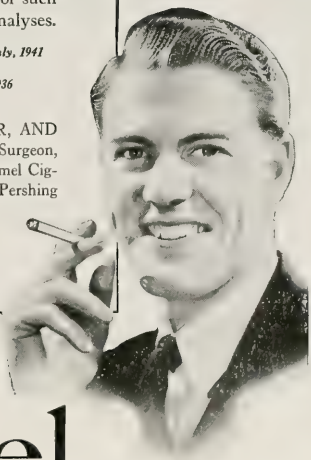
Given adequate support by patients, the physician may find case histories more reliable. In addition, the segregation of such data may facilitate valuable group analyses.

** The Military Surgeon, Vol. 89, No. 1, p. 5, July, 1941*
J. A. M. A., 93:1110—October 12, 1929
Brückner, H.—Die Biochemie des Tabaks, 1936

★ ★

"THE CIGARETTE, THE SOLDIER, AND THE PHYSICIAN," The Military Surgeon, July, 1941. Reprint available. Write Camel Cigarettes, Medical Relations Division, 1 Pershing Square, New York City.







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vice and putting them on a salary payable by the U. S. Government. Few doctors will at all agree with the statement that the average man takes seriously any obligation to keep himself, his family and his employees well. Ever since World War I this reviewer has urged that in any future war every male and female between the ages of 18 and 65 be drafted, placed under military law and by this law compelled to work wherever he or she is needed most. We shall see. It is to be doubted whether or not those of one profession or trade can be drafted without drafting all. Certainly this would be rank injustice to the group which has shown up best as to patriotism and unselfishness.

Prophecy is a rare gift. Maybe the authors have it. Any one who would risk money on it would have plenty of takers.

DIMENFORMON BENZOATE (alpha-estradiol benzoate) 0.16 mgm. twice weekly usually sufficed to relieve rather *severe menopausal symptoms*. Hot flashes were brought under complete control. The massive doses used by some clinicians are unnecessary and add greatly to the expense. The same applies to the menopausal-like symptoms in young women with onset dating back to pregnancy.—C. J. Weigel, in *Illinois Med. Jl.*, Aug.

THE THEATRICAL WORLD

"THE EVE OF ST. MARK"

In Maxwell Anderson's newest play at Broadway's Cort Theater in New York City, the Playwrights' Company has produced the season's first dramatic smash hit.

There has been no exception to the chorus of praise with which reviewers have greeted "The Eve of St. Mark" as the first play dealing with America's participation in the present war. In addition to commenting on the play's glowing tribute to the courage of the defenders of Bataan, the critics have noted with satisfaction that "The Eve of St. Mark" also contains the season's saltiest and most hilarious comedy in its scenes in an army training camp.

"The Eve of St. Mark" tells a simple, straight-line story of a young American farm lad who leaves his home, his family, his girl and his friends to serve his country. He is seen in training, at an embarkation centre, finally on a sunbeaten rock in the Philippines, where his heroism, and that of his comrades, justifies the dramatist's and the audience's burning faith in the essential rightness of American youth and American democracy.

What the critics called "an inspired cast," gathered together by Director Lem Ward, is headed by stage and screen star Aline MacMahon, in the role of a farm wife and mother, with William Prince portraying the soldier-hero and Mary Rolfe as his sweetheart.

"Maxwell Anderson," wrote Brooks Atkinson, drama critic of the New York Times, in the opening sentence of his review, "has restored to the theatre its self-respect," while John Anderson of the Journal American calls it "a play to be seen by all means, and with pride."

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OF INTEREST TO DOCTORS

The New Opera Company, which has opened its second season at the Broadway Theatre, has just issued a booklet titled "War's Challenge to the Lovers of Music" and stressing the war significance of a "people's opera."

Pointing out that in face of many hardships Britain is subsidizing music to a greater extent than ever before, Russia still supports symphony and opera; the Chinese provisional government has organized an Experimental School of Dramatic Arts Orchestra, a National Conservatory Orchestra and Chinese Philharmonic and sent them on tour, the booklet appeals for support.

The New Opera Company last year auditioned 800 young American singers and this year nearly 1,000, representing 42 states and island possessions.

It is repeating three of last year's successes, Verdi's "Macbeth," Tschaikowsky's "Pique Dame" and Offenbach's "La Vie Parisienne." The three new productions are Walter Damroch's one-act opera "The Opera Cloak," Moussorgsky's "The Fair at Sorochinsk" and Johann Strauss's "Die Fledermaus" (The Bat).

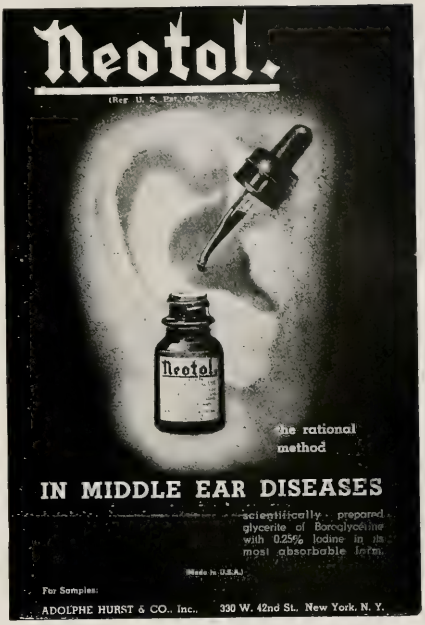
Mrs. Lytle Hull is president of the New Opera Company. Information and booklet may be obtained from The New Opera Company Campaign, Apt. A-B, Hampshire House, 150 Central Park, South, New York, N. Y.

AN ART EXHIBIT AND HOBBY SHOW is being held at Eimer and Amend, 49 East 34th street, in New York City, sponsored by the "New York Physician," a medical journal published in that city. More than seventy-five doctors have submitted several hundred art pieces—oils, etchings, sculpture, water colors, photographs, etc. Many of these art pieces have been donated for the benefit of the American Flying Services Foundation of which Dr. Meredith S. Strong is the medical director. This organization receives its funds from voluntary subscriptions and has for the past year engaged in rehabilitating candidates for the Army and Navy Air Corps who have been rejected for physical disability.

CONTACT LENS, as developed by Gertrud D. Salvatori, of 551 Fifth avenue, is receiving considerable attention at this time in view of the fact that many young men who have been accepted into the armed services with spectacles have been able to discard them and use lens.

A contact lens is a tiny, thin, saucer-shaped optical device made either of optical glass or plastic material, about the size of a five-cent piece. They are made to fit under the eyelids. The scleral portion rests on the scleral conjunctiva and the corneal section arches over, but does not touch the transparent corea. The refractive optical power is ground and polished on the corneal section.

Many of the leading ophthalmologists consider them a necessity in cases of keratoconus, corneal scars, ulcers of the cornea, aphakias, and many diseases of the lids, conjunctiva, cornea, iris, retina, and albinism.





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JAMES M. NORTHINGTON, M.D., Editor

VOL. CIV CHARLOTTE, N. C., DECEMBER, 1942 No. 12

Controlled Fluid Therapy in Burns

Case Report Illustrating Severe Hemoconcentration, Electrolyte Changes, and the Futility of Formulas in Replacement Therapy

John Scudder, M.D., and Robert H. E. Elliott, Jr., M.D., New York City

From the Surgical Pathology Laboratory of the College of Physicians and Surgeons, Columbia University, and the Department of Surgery, Presbyterian Hospital

In 1863, Baraduc's[1] disagreement with Dupuytren[11] that death from burns was not due to pain but to physical and chemical changes in the blood resulting from the loss of serum and subsequent hemoconcentration initiated the chemical approach to the toxemia in burns.

A case of second and third degree burns involving fifty-eight per cent of the body surface[5] and showing the greatest hemoconcentration in any patient who has survived at the Presbyterian Hospital, New York, afforded an opportunity for some detailed and repeated observations.

This report is presented to illustrate again some of the changes which take place in the blood, and, secondly, to show that the current formulas used to govern protein replacement are wholly inadequate when tissue destruction is so extensive.

TABLE I

		*Hemoglobin (Gm. %)	*Hematocrit (%)	*Plasma Proteins (Gm. %	Sodium	*Plasma Chlorides	CO_2 Combining Power	*Whole Blood Potassium	*Cell Potassium
					(milliequivalents per liter)			(milliequivalents per liter)	
Normal values		14.5	47.0	7.0	142.0	103.0	27.0	4.40	50.0	103.0
Days	Time									
1	6:40 AM	18.6	57.4	6.77	139.7	104.8	14.7	4.28	55.6	93.8
	10:20 AM	21.8	70.7	6.77	141.0	107.0	.....	4.50	67.9	94.2
	1:05 PM	20.1	66.2	6.97	142.4	105.4	14.5	5.25	64.7	95.1
2	7:45 AM	23.2	73.0	4.59	134.7	103.9	.....	4.92	67.5	90.6
	1:30 PM	18.3	57.3	4.80	132.3	104.7	14.4	4.24	57.7	97.5
3	8:30 AM	16.8	51.5	4.69	134.2	106.1	16.4	4.29	50.2	93.5
4	8:00 AM	.....	52.2	4.76	133.7	98.7	18.9	4.53	.....	.....
6	7:30 AM	.....	38.2	5.14	139.3	107.4	19.2	4.45	.....	.....
7	9:30 AM	11.2	33.8	5.61	146.0	108.1	18.8	3.81	35.0	96.1
8	10:45 AM	.....	33.0	6.16	153.0	115.0	24.4	3.67	36.8	104.2
9	3:00 PM	.....	32.7	6.33	148.2	112.3	23.2	4.07	37.0	104.8
15	1:00 PM	.....	36.4	5.75	141.9	.....	.....	2.92	.....	.....
22	4:00 PM	12.2	38.9	6.19	136.0	103.9	25.0	3.92	45.9	111.8

*Venous blood.

COMMENTS ON BLOOD STUDIES*

*Methods: Hemoglobin determinations were done by the Evelyn colorimeter.[16] The hematocrits were centrifuged in Sanford-Magath tubes[37] for one hour at 3,000 r.p.m. using heparin (Connaught Laboratories) as an anticoagulant. The total plasma proteins were calculated from the specific gravity of plasma[2] by the formula of Weech, Reeves and Goettsch.[49] Sodium was determined by the method of Butler and Tuthill,[8] carbon dioxide combining power by the method of Van Slyke and Neill,[48] chlorides by potentiometric titration,[22 29] whole blood and plasma potassium by a modification[39] of the argenticobaltinitrite method,[7 45 46] and cell potassium was calculated by the following formula:

$$\frac{D=A-(P \times C)}{B} \times 100$$

A=Amount of constituent in 100 c.c. of whole blood; P=Plasma volume, percentage in hematocrit: C=Amount of constituent in 100 c.c. of plasma: B=Cell volume, percentage by hematocrit: D=Amount of constituent in 100 c.c. of cells.

Hemoglobin (venous blood). This was 18.1 grams on admission and reached 23.2 grams within twenty-four hours. The curve roughly paralleled the changes in cell volume. During the first four hours, the cell volume increased 29 per cent while the hemoglobin rose only 22 per cent. Such a state could be produced by a swelling of the red cells due to an ingress of water.

Black[6] proposed a formula based on hemoglobin determinations for estimation of plasma deficit:

$$\frac{Hb_2}{100} = \frac{5}{5\text{-}X}$$

In this case with an admission hemoglobin of 128 per cent, X is computed as a deficit of 1,100 c.c. of plasma. This patient was actually given twice this amount. The next hemoglobin determination instead of being normal showed another increase of 11 per cent, representing a concentration of 39 per cent above normal.

Hematocrit (venous blood). On admission this was 57.4 per cent or 25 per cent above normal and increased another 34 per cent in spite of 2,000 c.c. of serum, 500 dog units of adrenal cortical extract, and 2,500 c.c. of normal salt solution with 50 grams of glucose. There have appeared recently in the literature formulas for the amount of plasma necessary in replacement therapy. Harkins[19 21] has advocated "100 c.c. of plasma for every point the hematocrit is above the normal of 45." Accordingly with a hematocrit of 57.4 per cent, the amount of plasma necessary to bring the value back to normal would be 100 X 12.4 = 1,240 c.c. Actually a greater dose (2,000 c.c.) was given and this consisted of serum, a fluid which has a higher protein content than plasma. The hematocrit, instead of decreasing, increased to 73 per cent. Elkinton, Wolfe and Lee[15] have proposed a formula to figure the plasma deficit. The deficit=

$$3.5W - \frac{W(100\text{-}H_o)H_nP_o}{2(100\text{-}H_n)H_o}$$

Substituting the figures in this case:

W, weight in kilos	=70
H_o, observed hematocrit	=57.4
H_n, normal hematocrit (Elkinton)	=44.0
Po_o, observed plasma proteins	= 6.77

Plasma deficit in grams=

$$3.5 \times 70 - \frac{70(100\text{-}57.4)(44)(6.77}{2(100\text{-}44)(57.4)}$$

or 107 grams. Actually he was given 136 grams and still the hematocrit increased. This illustrates that in the complicated picture of protein metabolism and protein loss associated with burns, these formulas are wholly inadequate. It is true that this method introduces a quantitative approach; but until more of the variable factors in burns are appreciated, the only safe method is to determine repeatedly the status of the blood when feasible. In this case, the hemoconcentration was not corrected until the fourth day during which time the amount of proteins administered was 335 grams, glucose 125 grams, and salt 90 grams. The subsequent decreasing hematocrit values revealed the characteristic burn anemia. This was combated by high protein diet and thirteen transfusions.

Plasma proteins. Thirty determinations were done during the first five weeks. Within twenty-four hours, the protein concentration in the plasma fell 30 per cent in spite of 2,000 c.c. of serum (136 grams). This is characteristic and emphasizes the need of protein replacement as well as the institution of those measures both locally and parenterally which tend to diminish this loss.

PLASMA ELECTROLYTES

Sodium. The level was maintained well during ing the first twenty-four hours. The next day its concentration decreased in spite of giving 64 grams of sodium chloride in the first forty-eight hours, a quantity roughly three times the amount in the normal plasma volume. This decrease in plasma sodium has been explained by both loss in the exuded serum and into the damaged tissues, especially into burned muscle.

By the seventh day, the sodium concentration was back to normal. The next day there appeared a sodium retention as revealed by an appreciable increase above normal.

TABLE II

PHYSICAL CHARACTERISTICS AND CHEMICAL CHANGES IN BLOOD REPORTED IN HUMAN BURNS

		(*Gm.*%)	(%)	(*Gm.*%	*Sodium*
Physical Characteristics					
Red blood cells	Increased	(6, 26, 32, 34, 35, 50)			
Hemoglobin	"	(6, 13, 35, 47, 51)			
White blood cells	"	(3, 13, 26, 32, 34, 52)			
Platelets	"	(3, 26)			
Specific gravity of blood	"	(3, 39)			
Hematocrit	"	(33, 39, 44)			
Sedimentation rate	Decreased	early, increased late (24, 40)			
Refractive index	Increased	(36)			
Anions (Plasma or Serum)	Decreased	(9, 13, 20, 24, 25, 33, 36, 43, 51, 53)			
Chlorides	"	(6, 13, 24, 30, 31, 33, 39, 41, 44, 51)			
Bicarbonate	Normal	(32)			
Phosphate	Increased	(24)			
Lactate	Decreased	(24, 28, 32, 40, 43, 44, 50)			
Proteins	"	(10, 40)			
Albumin	Increased	(10, 40, 51)			
Globulin	Decreased	(27, 28, 31, 40, 51)			
Albumin/Globulin	Increased	(40)			
Alpha Globulin/Albumin	"	(40)			
Beta Globulin/Albumin	"	(40)			
Gamma Globulin/Albumin	"	(10, 40)			
Fibrinogen or Fibrinogen/Albumia	Decreased	(6, 43, 53)			
Cations (Plasma or Serum)	Increased	(6, 38, 39, 41, 43, 53)			
Sodium	Normal	(32, 51)			
Potassium	Increased	(23)			
Calcium	"	(14, 24, 25, 36)			
Magnesium	"	(24)			
Polypeptid nitrogen	"	(24, 25, 30, 31, 34, 39, 51, 53)			
Amino nitrogen	"	(4, 24, 25, 33, 47, 51)			
Nonprotein nitrogen	"	(30, 39, 47)			
Urea nitrogen	"	(4, 39)			
Creatinine	Increased	early (4, 32, 36)			
Uric acid	"	(13, 24, 25, 33, 39, 47)			
Blood sugar	Decreased	late (17)			
Blood cholesterol	"	(27, 28)			
Icterus index	Increased	(31)			
Hydrogen ion concentration	"	(12, 24)			
Blood and plasma volume	Decreased	(6, 20, 33)			

For recent reviews of chemical changes (20, 23)

Chlorides. These were slightly above normal on admission and were so maintained. On the fourth day, there occurred a slight decrease below normal. By the eighth day, the chloride values reached a small peak. Roughly, the changes in chloride concentration paralleled the fluctuations in sodium.

Carbon dioxide combining power. Of the electrolytes studied, the bicarbonate concentration showed the greatest departure from normal. This reflects the characteristic acidosis seen in severe burns. By the end of the first week, this condition had been practically corrected.

Potassium. From a low normal on admission the concentration rapidly increased reaching within six hours a value 22 per cent above the admission figure. Within the next twenty-four hours, the potassium ion concentration returned to normal. This may be explained in part as due to better kidney output, 50 c.c. of adrenal cortical extract (1,250 dog units) and adequate intake of sodium salts.

Whole blood potassium. On admission this was 55.6 milliequivalents per liter or 11 per cent above normal. During the first six hours, this increased 24 per cent. Within forty-eight hours, whole blood potassium reached normal and then declined 30 per cent by the seventh day. Roughly, these changes in value followed the hematocrit.

Cell potassium. On admission, this was 93.8 milliequivalents or 9 per cent below our average normal. Cell potassium declined to a minus 12 per cent on the morning following the burn. These values remained low until the beginning of the second week when they reached normal. By the third week, cell potassium rose to 111.8 milliequivalents per liter or 9 per cent above normal. The low cell potassium during the first week may be

attributed to the effects of injury. The return to normal and to values above normal may have been due partially to the repeated transfusions given during this time.

Adrenal cortical extract. On the Surgical Service of the Presbyterian Hospital, adrenal cortical extract (Eschatin) was first used in treating the severe burns occasioned by the Hindenburg disaster in 1937.[39] Its success warranted further trial. For the past five years, the extract of the adrenal cortex as originally prepared by Swingle[42] has been employed in cases of shock in which tissue damage has been extensive. We have not given the synthetic products. We judged our doses by following hemoconcentration. Indiscriminate use of cortical extract, uncontrolled by blood studies, has been one of the factors in its tardy acceptance. The introduction and use of insulin was enhanced by blood sugar estimations. We urge following the water and salt shifts as checks on cortical therapy. This case and the table of blood chemical changes (Figure II) show the rationale of adrenal cortical extract as *one* of the therapeutic measures in burns.

CONCLUSIONS

In severe burns, repeated examinations of the blood are necessary as guides to therapy without which one cannot know whether the desired results are being achieved or not.

This case illustrates the characteristic acidosis, hemoconcentration, hypoproteinemia, sodium loss, and hyperpotassemia which occur early in the burn syndrome; and the hyperbilirubinemia, hypocholestremia and anemia seen later. Due to adequate salt, the plasma chlorides were well maintained.

The jaundice, the three plus cephalin flocculation,[18] and increased serum bilirubin are indicative of liver damage.

The therapy included: serum, salt, adrenal cortical hormone, glucose, oxygen, plasma and blood transfusions as well as a high protein, high vitamin diet.

An amount of blood and blood substitutes equivalent to that obtained from forty-two donors was used.

The weight loss of sixty pounds illustrates the profundity of the injury due to burns.

The authors are indebted to the American Red Cross, William Thalhimer, M.D., and Edward B. Self, M.D., for the serum used in the case reported in this article.

We wish to express our appreciation for the continued support of Dr. Allan O. Whipple in these studies.

Case Report

D. R. No. 644064, male, aged 32, elevator operator.

May 28th, 1941: While working on an apartment house furnace, an explosion due to the coal gas and back draft burned the patient. Admitted by ambulance forty-five minutes after the accident.

B.P. 140/85, pulse 96.

The burns sustained by the patient involved over 58% of the body surface and included face, neck, fingers, hands, forearms, entire lower extremities, and buttocks.

Magendie 0.5 mls. i. v.

6:40 a. m.: Hematocrit, 57.4%; total plasma proteins, 6.77 Gm. % (on admission).

An infusion of 1000 c.c. of saline was started and debridement and tanning of burned areas were carried out under morphine and scopolamine anesthesia. During operation the patient received 500 c.c. of pooled serum.

10:20 a. m.: Hematocrit, 70.7%; total plasma proteins, 6.77 Gm. % (taken at end of operation). This shows that despite serum and saline hemoconcentration is proceeding. Given 1,500 c.c. of serum.

1:05 p. m.: Hematocrit, 66.2%; total plasma proteins, 6.97 Gm. % (taken after the above medication).

Because the hemoconcentration persists, 20 c.c. of adrenal cortical extract (500 dog units) given i. v., 500 c.c. of saline, and 1000 c.c. of 5% glucose in saline.

Attempted blood volume determinations with the blue dye valueless because of the escape of the dye onto the dressings.

Sulfanilamide by mouth. Dose today 9.6 Gm.

Total intake for the day: 7,590 c.c. Output of urine: 150 c.c. Protein intake, 136 grams; salt, 34 grams; glucose, 50 grams.

May 29th (second day): B. P. 110/80, p. 120, t. 98.0.

7:45 a. m.: Hematocrit, 73.0%; total plasma proteins, 4.59 Gm. %. Serum sulfanilamide, 5 mg. %.

Comment: This shows extreme hemoconcentration which is not being successfully combated. There has been a great loss in the plasma proteins in the last eighteen hours.

Therapy: 1000 c.c. of serum; 30 c.c. of adrenal cortical extract (750 dog units), 1000 c.c. of saline.

1:30 p. m.: Hematocrit, 57.3%; total plasma proteins, 4.80 Gm. %.

Comment: The blood is still concentrated and the plasma proteins are low.

Therapy: 1000 c.c. of serum, 1000 c.c. of saline and glucose. Tanning continued; patient under lights and cradle.

Total intake: 8,120 c.c. Output of urine: 800 c.c. Protein intake, 136 grams; salt, 30 grams; glucose, 50 grams.

Culture of burns: Hem. B. subtilis, non-hem. Staph. aur., Cl. welchii.

May 30th (third day): Pulse 120, t. 99.4.

Given 500 c.c. of 5% glucose in saline.

8:30 a. m.: Hematocrit, 51.5%; total plasma proteins, 4.69 Gm. %. Sulfanilamide, 6.7 mg. %.

Comment: The hypoproteinemia is of great concern. To have more serum.

Therapy: 500 c.c. of serum, 1000 c.c. of saline, and 10 c.c. of adrenal cortical extract (250 dog units).

Total intake: 5,350 c.c. Output of urine: 1900 c.c. Protein intake, 34 grams; salt, 16 grams; glucose, 25 grams.

May 31st (fourth day): Pulse 130, t. 99.2.

8:00 a. m.: Hematocrit, 52.2%; total plasma proteins, 4.76 Gm. %. Sulfanilamide, 6 mg. %.

Comment: Hypoproteinemia still present. Patient appears more toxic.

Therapy: 400 c.c. of serum, 1000 c.c. of saline.

8:00 p. m.: Hematocrit, 44.0%; total plasma proteins, 4.90 Gm. %.

Therapy: 500 c.c. of serum and 1000 c.c. of saline.

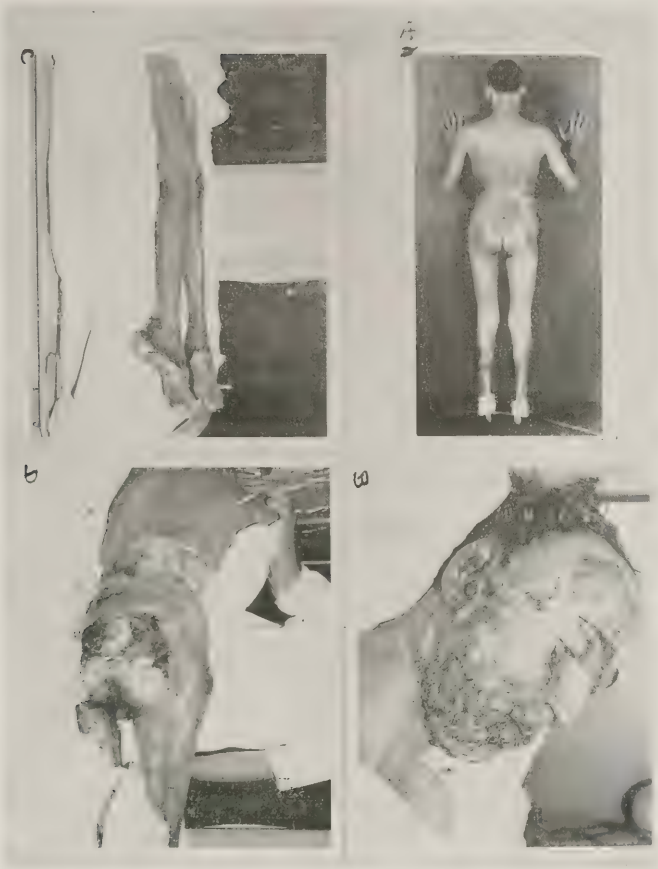
Total intake: 6,850 c.c. Output of urine: 2,500 c.c.

Protein intake: 61 Gm.; salt, 22 grams.

June 1st (fifth day): Pulse 130, temperature 100.4.

Therapy: 2000 c.c. of saline.

3:00 p. m.: Hematocrit, 39.5%; total plasma proteins, 5.31 Gm. %.



LEGEND FOR FIGURE I

A. Seven months after burn showing extent and depth especially in sacral region. This was grafted by pinch grafts two months after injury. *Hands:* The entire area of both hands and part of both forearms were involved with second degree burns most of which showed large bleb formations. During initial cleaning with soap and water the skin of both hands was removed as one removes a rubber glove. These areas were covered wth K-Y jelly, Dakin's gauze, and compresses. Note no contracture. Tannic acid was *not* used on the hands.

B. Twelve days after burn. The entire face, ears, and neck were involved in second degree burns which showed only slight blister formations. On admission the hair around the forehead was shaved and debridement of face instituted. All the epidermis was removed over the face, neck and ears. These areas were all cleaned with soap and water, irrigated with saline and K-Y jelly applied.

C. The extent of burns of lower extremities twelve days after injury. Shows eschar due to tanning with 5 per cent tannic acid followed by 5 per cent silver nitrate. This was applied after the areas had been scrubbed with soap and water, irrigated with saline, and debridement of burned epithelium.

D. Twenty-nine days after burn showing extent of second degree burns of buttocks and back.

Total intake: 5,895 c.c. Output of urine: 1,650 c.c.
Protein intake, 0; salt, 17 grams.

June 2nd (sixth day): Pulse 140, temperature 102.0.
7:30 a. m.: Hematocrit, 38.2%; total plasma proteins, 5.14 Gm. %.

Comment: More serum; to have high-protein diet.
Therapy: Placed in oxygen tent. 500 c.c. of serum.
Morphine for pain.
Total intake: 3,800 c.c. Output of urine: 3,400 c.c.
Protein intake, 34 grams; salt, 3 grams.

June 3rd (seventh day): Pulse 150, temperature 103.0.
9:30 a. m.: Hematocrit, 33.8%; total plasma proteins, 5.61 Gm. %. Serum sulfanilamide, 5 mg. %. Serum bilirubin, 17.4 mg. %. Jaundiced. Urea nitrogen 16 mg. %.

Comment: Needs blood and more proteins.
Therapy: 500 c.c. of blood and 350 c.c. of serum. Sulfanilamide discontinued.

Summary of second week: Given a transfusion daily for five days. The patient was kept on a high protein fluid diet and had nicotinic acid and vitamin C daily in addition. Pulse dropped from 160 to 130. The temperature averaged 103 per axilla. Fluid status checked by daily hematocrits and total protein determinations.

Cephalin flocculation 3+; serum bilirubin 19.6 mg. %, serum cholesterol 81 mg. %.

June 10th: Hematocrit, 39.6%; total plasma proteins, 5.95 Gm. %.

X-ray: Extensive mottling of both lung fields. Suggesting bronchopneumenia.

Summary of third week: Pulse averaged 120 and temperature averaged 102. Was given two transfusions. Left eye developed a corneal ulcer and endophthalmitis. Still in oxygen tent.

Blood urea nitrogen, 12 mg. %; serum cholesterol, 89 mg. %.

June 17th: Hematocrit, 33.9%; total plasma proteins, 6.02 Gm. %.

Summary of fourth week: The left eye was eviscerated on June 25th. Patient still in oxygen tent. Given four blood transfusions and one of plasma.

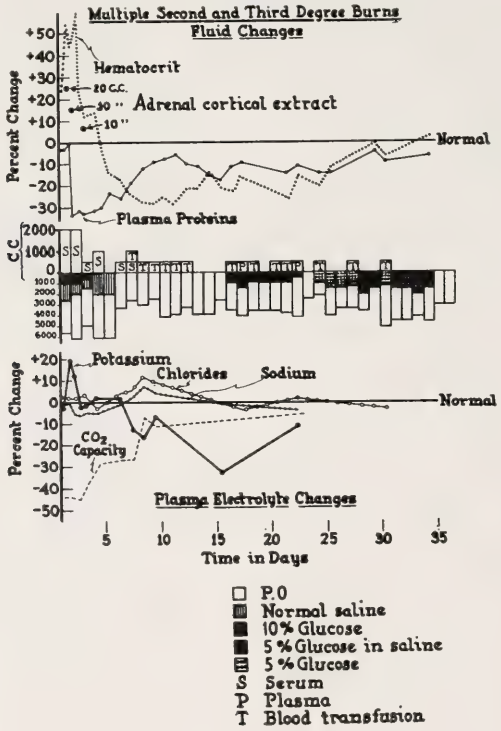
Serum cholesterol 100 mg. %. Serum bilirubin 2.9 mg. %.

June 24th: Hematocrit, 45.2%; total plasma proteins, 6.63 Gm. %.

Summary of the following fifteen weeks: Patient's normal weight was 150 lbs. On the eighty-third day his weight had decreased to 89 lbs. With the aid of a high vitamin, high caloric, and high carbohydrate diet, supplementary vitamins, and small doses of insulin his weight was restored to 107 lbs. Pinch grafts to left knee and to sacrum hastened the healing of the wounds. He was discharged on the 132nd day walking.

Serum cholesterol increased to 190 mg. %. Oxygen was discontinued at the beginning of the sixth week.

July 22nd, 1942: Weight 137 lbs.



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THE DIAGNOSIS OF CARCINOMA OF THE RECTUM A DUTY OF THE GENERAL PRACTITIONER

(A. A. Landsman, New York, in *Med. Rec.*, Oct.)

Patients who always had normal daily movements and find that they must resort to physics and are obliged to take more and more of them and get less and less satisfaction, and patients who have occasional mild attacks of bleeding from the rectum, whether they have piles or not, should be carefully investigated. Assume that the bleeding is due to carcinoma until proved otherwise. Sometimes a sudden profuse hemorrhage not accompanied by any subjective symptoms is the first sign.

Some persons with a new growth are obliged to make repeated and useless efforts to empty the bowel. This may be due to edema, congestion or obstruction at the point of development of the lesion.

Heavy, dull, dragging pain in the lower sacrum radiating to the thighs and legs and a feeling of pressure demand sigmoidoscopic examination to rule out growths impinging upon nerves.

A small proportion have only anemia, pallor, weakness, fatigue and loss of weight which cannot be accounted for. Others chronic gastrointestinal symptoms—increasing distention, pyrosis ,epigastric distress, flatulence which cannot be explained by x-ray of the intestinal tract or functional basis.

TREATMENT OF BACILLUS PYOCYANEUS INFECTION OF THE CORNEA WITH SULFONAMIDES

(H. D. Solomon, St. Petersburg, in *Jl. Fla. Med. Assn.*, Oct.)

Infection of the eye owing to this organism is not common. It has long been known to be probably the most destructive of all the organisms which attack the cornea, even more so than gonococcus.

This species is a gram-negative slender rod, armed with a terminal cilium—the bacillus of blue pus. It is ordinarily slightly pathogenic and is observed frequently in the normal skin. In certain conditions it assumes a character of extreme virulence and forms one of the rarities of ocular pathology, producing a membranous or purulent keratoconjunctivitis usually resulting in perforation and loss of the eye. Except in rare instances, all previously recognized treatment of this infection of the cornea has been of little avail.

A boy, aged 12, seen August 8th, 1940, after having been pricked in the eye by a sandspur on the previous day. The eye had become extremely inflamed and painful. Ulceration of a small central area of the cornea was covered by a bluish membrane. Hospitalized—atropine, zinc sulfate, hot applications, irrigations and lactogen administered intramuscularly.

A smear was taken on September 11th. Unidentified gram-negative bacilli were reported, and a culture prepared. After 48 hours the Bacillus pyocyaneus was identified.

As the depth of the ulcer and membrane was increasing and cellular elements were forming in the aqueous, on September 17th five grains of neoprontosil was given every four hours. Improvement was noted on the following day; continued and the boy was discharged from the hospital six days later with little inflammation remaining.

After a few weeks all inflammation had disappeared leaving only a thin scar covering the pupillary area. The patient was last examined on February 1st, 1942, at which time he could see large objects and had some useful vision.

In view of this report sulfapyridine would be the drug of choice in such an infection.

SULFAMETHAZINE

(D. W. Macartney, et al, *The Lancet* (Lond.), May 30th)

Sulfamethazine appears to be a new sulfonamide of high therapeutic efficiency, but with considerably less toxicity than previous drugs of this type.

Seventy-three patients with pneumococcal lobar pneumonia were given an initial dose of 4 Gm. followed in most cases by 2 Gm. every six hours or by 1 Gm. every four hours. In critically ill patients where the blood level was less than 4 mg. per 100 c.c., 2 Gm. were given every four hours until there was obvious clinical improvement. In this series there were five fatalities.

THE VALUE OF THE SALICYLATES AS COMPARED WITH THE SULFA DRUGS

(W. A. Swenson, Rushville, Neb., in *Neb. Med. Jl.*, Nov.)

Salicylates are probably bacterostatic in respiratory infections as well as rheumatic infections, if given in full doses—a grain to the pound of body weight per day in acute conditions.

In acute respiratory infections, especially pneumonias, if given at all they should be given every two hours in order to prevent chills between doses.

The sulfa drugs are probably superior to the salicylates in the ordinary case of respiratory disease, and should be used unless contraindicated.

A HOCKEY-STICK INCISION FOR REMOVAL OF THE COCCYX

(G. T. Tyler, Jr., Greenville, S. C., in *Sou. Med. Jl.*, Nov.)

For removing the coccyx, the incision most frequently employed is the mid-line. The skin edges are easily united, but they cannot be easily retained in the depression between the buttocks.

Recently I employed a hockey-stick incision, the short arm transverse, just above the articulation with the sacrum. The long arm, over the fleshy part of the buttock, can be made as long as required for removing the coccyx. Closure is easy, the skin flaps falling naturally into position. Experience with this incision has been satisfactory. I recommend it to the surgical profession.

Tuberculous Osteochondritis of Costal Cartilages and Sternum

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TUBERCULOSIS of the costal cartilages and sternum is relatively uncommon and usually is accompanied by evidence of the disease elsewhere in the body. It usually follows pleural involvement with rupture externally. Some cases have been reported arising from primary breast involvement.

The treatment is excision of the tuberculous process. In many cases a wide excision of the disease process is sufficient.

Siler[1] recently reported a total excision, in stages, of all costal cartilage and the entire sternum, with recovery. His case was due to an acute costal chondritis following a left subdiaphragmatic abscess complicating an operation for a perforated peptic ulcer. In this case the excision was more extensive than in my own as he removed the entire manubrium.

Due to rarity of extensive resections case reports are very much in order.

Case Report

A white widower, aged 43, was first seen July 11th, 1940, at 1·00 p. m., with an incarcerated right inguinal hernia. This hernia had been present since childhood but had never given any trouble until the previous week when it protruded and could not be reduced. The swelling had become very painful and tender, increasing in size.

F. H.—Father dead—4 yrs., high blood pressure. Mother living and well; siblings 3, living and well; wife dead 1 yr. of typhoid fever. No family history of tuberculosis or insanity.

P. H.—Had measles, mumps, whooping cough as a child. First noticed a swelling of right chest 19 yrs. ago. It was painless at first but later became tender. Two years later this was incised and drained. He has had several operations later for this but the condition has gradually spread until there are now seven draining sinuses with much scarring. He has been a welfare case for 17 yrs.

Physical Examination: Fairly well developed and nourished white man weighing 139 lbs., in pain and acutely ill. Temp. 98°, pulse 80, respiration 20, B. P. 130/70. E. E. N. & T. negative except for many old snags of teeth. Heart and lungs normal. There was an area 4 x 8 inches in diameter over the right costal cartilages and sternum containing seven draining sinuses lined with granulation tissue. There was a thin seropurulent discharge with excoriation and scarring. One partially healed incision 4 inches long was seen through the center of this area. The skin was cyanotic in this area due to scarring and poor blood supply. One of the sinuses arose above the xiphoid cartilage.

There was an orange-sized mass in the right inguinal region and scrotum which was tender. It was irreducible. There was edema of the skin over this mass.

The genito-urinary examination was negative, also that of the rectum, extremities and urine.

The hemoglobin was 70%, white blood count 7,750—polys. 70%, lymphocytes 28, eosinophil 1, basophil 1. The Kahn test was negative.

Operation No. 1 was performed under spinal anesthesia. A large piece of gangrenous, adherent omentum was found plugging the sac and extending down to the testicle. A modified Halstead repair was done.

Convalescence was uneventful. The wound healed per primam and the patient was discharged July 24th, 1940.

He was readmitted September 6th, 1940, for operation on the chest. At this time the findings were the same as before except that the hernia had healed with a firm wall.

X-ray examination of the chest revealed widespread loss of bone detail of the body of the sternum and calcification of all costal cartilages. An exact diagnosis was not attempted from these findings.

Several smears from the sinuses showed no tubercle bacilli.



Final result after excision of cartilages and greater portions of sternum.

Operation No. 2.—On September 10th, 1940, under cyclopropane-oxygen anesthesia, a curved incision was made from the right midclavicular line at the level of the 2nd rib, extending across the sternum, then downward to the xiphoid and back to the right along the costal margin of the 8th, 9th and 10th ribs. This large flap was turned back to the right and dissected free of the sternum and costal cartilages. The sinuses were in the center of this flap. They were curetted free of all granulation tissue. There was much calcification of all costal cartilages with replacement of their centers with granulation tissue. This resulted in tubular calcified non-collapsible cartilages filled with granulation tissue. One sinus extended down behind the right lateral wall of the sternum into a chronic retrosternal abscess 2 x 3 inches. Another sinus extended down to the diseased xiphoid which was partly exposed in a cavity lined with grayish granulation tissue. The costal cartilages were excised on the right from the 3rd to the 10th along with a part of the contiguous ribs. Many pockets of granulation tissue were found behind the ribs and cartilages. Part of the xiphoid cartilage was removed with ronguers. Three-fourths of an inch of the right border of the sternum was removed from the 3rd rib downward unroofing a retrosternal abscess lined with chronic granulation tissue.

Four grams of sulfanilamide was dusted in the wound and it was closed with drainage by one cigarette drain.

Postoperatively there was a profuse serosanguinous drainage for 8-10 days. At no time did the temperature rise above 100°. There was very little discomfort. The stitches

1. Siler, V. E.: Acute Costal Chondritis With Sternal Osteomyelitis. *Surgery*, 12:402 (Sept.), 1942.

were removed on the 10th day and the patient was discharged on the 15th day.

The pathological report was osteochondritis, chronic (tuberculous), with sinuses. Microscopically there were seen sections of bone, cartilage and fibrous tissue with chronic inflammatory infiltration sinus tracts, and formations of atypical tubercules. A note was made that syphilis should be excluded.

Several subsequent Kahn and Wassermann tests were negative.

The wounds were dressed once or twice weekly for the next eight months with healing of four of the sinuses. On three occasions the persistent sinuses in the region of the 2nd costal cartilage on the right, the right sternal border and the xiphoid cartilage were curretted under local anesthesia in the office with temporary relief. At times he had severe substernal pain requiring codeine and salicylates for relief.

Operation No. 3.—The patient was again admitted to the hospital on May 5th, 1941, because of substernal pain requiring morphine for relief. Under nitrous oxide-oxygen anesthesia the sinuses were curretted widely. The 2nd costal cartilage on the right was removed with a small adjacent portion of rib. The substernal abscess was much larger than before extending from the right to the left border of the sternum. There was involvement of the 6th costal cartilage on the left. The sinus to the xiphoid was thoroughly curetted.

He was discharged May 14th, 1941, slightly improved and having no pain.

Dressed one to three times weekly, slight if any improvement. Twelve intravenous injections of neoarsphenamine at weekly intervals produced no improvement.

Many different chemicals were used without effect.

Microscopic examination of tissue removed at this time showed a heavy granulamatous type, chronic, inflammatory reaction, apparently of the subcutaneous tissues, with granulating borders, consistent with sinus tracts which contain products of suppuration. The granulomatous inflammatory tissue along the sinus tracts was ear-marked by the presence of anatomical tubercles with associated giant cells and caseation.

Operation No. 4.—The next operation was September 11th, 1941, under nitrous oxide-oxygen anesthesia.

At this time there were 5 to 6 sinuses along the sternal border from the 2nd rib down. The original sinus to the xiphoid remained.

The old incision was opened. The xiphoid and ¾ of the lower portion of the sternum were removed. The cartilages from the 3rd to the 10th on the left were removed back to normal tissue. The retrosternal tissue was very thick and scarred. The wound was packed open with azorchloramide in triacetin gauze.

Discharged September 15th, 1941.

There was a gradual narrowing of the open wound but persistence of drainage from all remaining cartilages on left and the remainder of the body of the sternum.

Operation No. 5.—On January 1st, 1942, the last operation was performed under nitrous oxide-oxygen anesthesia. The old incision was opened and the flaps dissected laterally and upwards. The lower end of the incision was curved along the left costal margin.

All of the remaining costal cartilages were removed on the right and left. All the remaining body and one-half of the manubrium sterni were excised. At no point was any granulation tissue left. The thick scar over the heart and mediastinum prevented any movement in the midline. There was some movement over the left chest as from ½ to 3 inches of the anterior portions of the ribs were removed. The entire wound was packed open for one week. Sulfanilamide (8 grams) was scattered over the wound before packing.

The postoperative course was uneventful and he was discharged January 13th, 1942.

Three months later the wound had healed.

Discussion

The multiplicity of operations proved that the surgical attack of tuberculous osteochondritis of the sternum and costal cartilages must be of a radical nature. The lesser procedures resulted in extension of the original foci.

It might be said that to attempt such a radical extirpation in one stage would hardly be feasible. It would likely result in a flabby chest wall. Since the excisions were done in stages the chest wall fibrosed sufficiently between operations to result in firm fixation. This man's chest wall feels as firm today as it did before any of the cartilages were removed.

After living on the Welfare Department for such a long time it is unlikely that he will return to work.

His general health is good and he is to all intents and purposes cured.

THE INJECTION TREATMENT OF HEMORRHOIDS

(A. J. Cantor, New York, in *Med. Rec.*, Oct.)

The varicosity must be internal to the pectinate line. External varicosities should never be subjected to this type of therapy. Pain and sloughing may result if the latter group is so treated.

The hemorrhoids to be treated should be of medium or small size and not on a pedicle. If a pedicled varicosity is treated by sclerotherapy it may be thus converted into a fibrous tumor.

The chief indication for therapy is rectal bleeding. All cases of rectal bleeding must be carefully examined with the sigmoidoscope. In certain instances a barium enema colon study may also be indicated. Only when more serious causes of hemorrhage have been ruled out should therapy be instituted in the hemorrhoidal areas. Such a patient may also harbor a cancer higher in the rectum or in the sigmoid dolon.

Whether or not prolapsing internal hemorrhoids should be treated by sclerotherapy is controversial. However, in the presence of general debility, old age or other surgical contraindication, and after properly informing the patient that treatment may either not succeed or be of temporary benefit only, sclerotherapy may be instituted.

Quinine-and-urea-hydrochloride 5 per cent has proven entirely satisfactory for routine use. It is perhaps most conveniently employed in individual 2-c.c. ampoules.

Place the solution in the submucosa, depth of injection 1 cm. or less. It must not be infiltrated into the mucosa, lest slough occur.

The site of injection will be determined by the size of the varicosity. Whether or not more than one site is to be injected will be determined by the response to therapy. Thus, if a single superior-pole injection produces sufficient venous compression to obliterate the hemmorhoid completely, certainly central or inferior pole injection would not be required. The ideal injection would enter at the superior pole and extend downward to complete the venous compression.

(Continued on Page 67)

Management of Diabetes Mellitus*

LESTER AVANT CROWELL, JR., M.D., Lincolnton, North Carolina

LET US CONSIDER first the uncomplicated diabetic, whose disease has been discovered early, perhaps accidentally, in whose case the diagnosis has been suspected from symptoms and glycosuria, and confirmed by finding elevated blood sugar tests.

In such cases hospitalization for regulation and instruction is highly desirable, but not absolutely necessary. In the hospital the diabetic can be more efficiently trained and regulated, he is more impressed with the seriousness of his disease and is more apt to subsequently follow his routine than if not hospitalized.

The length of hospitalization varies with the severity of the disease and the intelligence of the patient. A child usually requires a longer time. A bright patient can learn the routine quicker. Four to seven days is the usual time.

We believe that a diabetic should know much about his disease, in order to get along best. We, therefore, teach him all we can during the period of hospitalization while making it simple enough to avoid confusing him. This includes private talks, typewritten instructions and demonstrations. Books are referred to him to read if he wishes. Three things are thoroughly taught: (1) preparation and weighing of the diet, (2) Benedict's qualitative test for sugar in the urine, and (3) the technique of insulin administration.

We insist on weighed diets, as we consider this of importance second only to insulin in the treatment of diabetes. We have not found our insistence on this point to be impracticable, as some contend. Of 183 diabetics we have treated in the past 5½ years, only one refused to buy a scale. In several indigent cases a scale has been bought by charitable agencies or individuals.

We believe that, provided the disease is uncomplicated, is discovered reasonably early and the patient follows his routine, there is no reason why he should not live as long, work as hard and feel as well, as the non-diabetic. Probably this is not strictly true, since chronic degenerative arterial changes are likely to proceed a little more rapidly in even the ideally regulated diabetic than in the non-diabetic who would just as carefully regulate his food intake. Since such ideally eating non-diabetics are seldom, if ever, found in practice, the foregoing statement holds true. At any rate, the diabetic makes a better patient if he proceeds on that belief. The idea which should guide treatment is to restore the diabetic to normal life; and, except for carrying out his routine, this can be done.

If he is to regain his ability to live and work as he did before he came down with the disease, he must have the same amount and kinds of food he had before. There is as much common sense in that as there is in the fact that a steam engine cannot perform as much work on 50 pounds of fuel as it can on 100 pounds. Furthermore, the normal proportion of 10 calories of carbohydrate to five of protein to six of fat must be maintained. He must have at least 120 grams of carbohydrate daily; for manual laborers, 200 to 400 grams daily. This is called the *high,* but I prefer to call it the *normal* carbohydrate diet. I stress this because the carbohydrate starvation ideas of pre-insulin days have died hard.

Besides believing that most diabetic diets are too small in amount, especially in carbohydrates, we think the methods of fitting diabetic diets to the patient in many cases are too complex. The various methods and formulas for evaluating separately many of the factors which influence a person's metabolism, and for predicting with a high degree of precision his fuel requirements, are, for the majority of persons, unnecessarily elaborate. Furthermore, the tables of averages seldom fit the case at hand. People of the same age and weight and occupational category differ widely in their food requirements. Good examples of this were two cooks I employed, each for about a year. The one I now have is easy-going, never in a hurry, and loses no motion as she swings smoothly from one task into another. The other was hesitant, jumpy and nervous, which caused her to turn off not more than half as much work as the first one did, but to eat almost twice as much. The tables of averages would have missed both these persons widely, even though they both weighed the same, were the same age and supposedly did the same work. When adequate amounts of food, especially of carbohydrate, are taken, they can be balanced by proportionately adequate insulin dosages, and there is not the temptation to eat forbidden sweets.

*Presented to the Seventh District (N. C.) Medical Society, meeting at Monroe, November 18th.

In years past we laboriously calculated for each diabetic an individual diet supposed to fit his own individual needs, and tried to make him stick to it, and more often failed than not. For the past 5½ years we have been using fixed normal diabetic diets, seven in all, ranging in food value in even steps between 1272 and 2300 calories. If the patient is a child needing less than 1272 calories, we subtract foods from the smallest diet in such a way as to maintain the proper proportions, and add to the top diet for the few cases which need more than 2300 calories per 24 hours. The normal diet, that is, one in which the 10-5-6 ratio of carbohydrate-protein-fat is maintained, causes peripheral vascular narrowing to proceed much slower than is the case with the low carbohydrate diets. Patients receiving liberal amounts of carbohydrates are much happier and more coöperative.

For the patient's first meal in the hospital, we give whichever of the seven graduated diets seems roughly to fit closest, judging from his age, weight and type of work, aided by our clinical experience. Thereafter, changes up or down are made by trial and error, being guided by his weight changes, his strength and sense of well-being, and his desire for more or less food. The patient is encouraged to exercise as nearly as he can to the amount he does in his usual activities. Blood sugar tests are made before breakfast and supper each day, and the 24-hour urine output is collected in four periods—morning, afternoon, evening, and night. Each period specimen is examined separately and recorded.

Insulin is started on the first or second day and adjusted by trial and error, using blood and urine sugar tests as guides. Our aim is to get the patient sugar-free and bring the blood sugar down to between 100 and 170. In a rare case symptoms of insulin reaction develop if the blood sugar is brought this low.

We do not attempt to establish the patient's carbohydrate tolerance as we consider this a waste of time.

After he leaves the hospital, the process of regulation is continued by having him return every three to seven days for about six weeks. Thereafter, we ask to see him every one or two months.

Beginning on the first day, the patient goes to the kitchen before each meal and learns the preparation and weighing of his food. He learns that he is to eat the foods commonly eaten in the average home. The two important things are (1) a balanced diet, and (2) a weighed diet—so that he gets the same nourishment values from day to day, not the same food every day, for there are substitutions, but the same food values. The diet factor is kept constant by weighing.

For example, No. 6 diet provides for each 24-hour period:

300 grams of 5% vegetable—divided between dinner and supper

450 grams of orange, or its equivalent food value in other fruits

30 grams of oatmeal weighed dry before cooking (equals 240 grams cooked)

180 grams of potato—usually divided between dinner and supper

120 grams of bread—divided equally among the 3 meals

240 grams of sweet milk—usually divided equally among the 3 meals

1 egg—eaten at breakfast

180 grams of fatless meat—usually divided equally between dinner and supper

30 grams of bacon—eaten at breakfast

120 grams of 20% cream—divided equally among the 3 meals

45 grams of butter—weighed out each morning, used in cooking the food during the day, with the remainder eaten on bread at supper.

The foods in this list provide 2299 calories. If it is desired to reduce the patient's diet, he is stepped down to No. 5, which provides the same foods, but less of some of them. If the patient needs more than 2299 calories per day, he is given the same foods, but an increase in the amounts of some or all, maintaining the proper proportions. A change in the diet order is simply made by writing it on the patient's chart, and there is no confusion in the kitchen over the change.

Frequently, during the 6-weeks observation period following hospitalization, after the patient has returned to work, he finds that he is not getting enough food to keep up his strength and weight, and the amount has to be increased, sometimes a great deal. Quite often, during this period when the diet is increasing, the insulin requirement decreases. Work has an insulin-like effect on carbohydrate metabolism. We have observed in 84 per cent of the patients we have regulated, that over a period of months following the beginning of treatment, the carbohydrate tolerance increases steadily; or, to turn it around, the amount of insulin required daily by 84 per cent of our patients steadily drops during the six to 12 months following the beginning of regulation if the patient is on the *high* or the *normal* carbohydrate intake. One patient who left the hospital taking 80 units of PZI daily was seven months later taking 30 units daily; another, 42 on leaving the hospital, six months later only five. Some have left the hospital taking 20 to 30 units daily who six to 12 months later required no insulin. This, of course, does not mean that they are cured. They must continue weighing their food and testing their urine, and be on the lookout for a decrease in sugar tolerance which may occur gradually, or even rapidly, even in

the absence of infection or febrile disease. This waxing and waning of the severity of diabetics may occur unrelated to febrile disease or infection.

It is just such cases which give the quack his most convincing arguments, and which account for the alleged cure of diabetes by medicines other than insulin, such as uvursin and other medicines given by mouth.

The diet is fitted to the individual patient as is a tailor-made suit of clothes, and not fitted to a theoretical average or normal. The urine testing which the patient is required to do helps in adjusting the diet by showing if the patient is spilling sugar and if so, what time of day he is spilling it; so the food may be shifted from one meal to others, interval feedings may be given, or the amount of insulin, or time of giving it may be changed so as to make the patient sugar-free around the clock. The giving of regular insulin in conjunction with PZI may be done at times.

Foods the patient especially likes, but which are not listed on the diets, may be added by giving the same amounts of these each day. One patient liked cheese, so an ounce (30 grams) of this was given him at supper each day. This kept the food factor constant on a slightly higher level. The same has been done for pies and cakes. To take care of these extras, insulin is increased if and as necessary.

At least 76 substitutions may be made on these diets by using the simplest arithmetic. These give variety to the diet and make it nearer to what non-diabetics eat. Lists of 5-, 10-, 15- and 20-per cent vegetables are given the patient on discharge, as well as lists of various fruits, with the number of grams of each which may be substituted per 100 grams of orange pulp.

If the patient does not work on Sunday, he is given a little less food on that day, or else a little larger dose of insulin.

The patients are allowed sugar to sweeten coffee, oatmeal, grapefruit etc., by substituting one gram of sugar per 10 grams of orange pulp.

Too much effort should not be made to reduce the weight of some diabetics, unless they are unreasonably fat. Some patients whose theoretical normal weight is 160 pounds, for example, do not feel or do as well, and are not as able to carry on their work, if brought below 170 or 180, even though slowly. In no case should weight be reduced faster than 1¼ pounds a week.

We use protamine zinc insulin in 98 per cent of our cases, because its slower rate of absorption from the point of injection makes its action more physiological. We have not changed over a few old diabetics who have taken regular insulin for a long time, because they are accustomed to the effects of regular insulin, and it is not worth our effort or the inconvenience to them, not to speak of some danger, to reëducate them. The change from regular to protamine must be made roughly by trial and error; usually we start the daily PZI dose at ¾ of the total previous daily amount of regular insulin. About ¾ of our patients taking protamine, take protamine only, the other fourth take both. For example, we had trouble getting one patient sugar-free during the morning hours even after making several shifts of the food among the meals and giving some interval feedings. We solved the problem by giving him each morning at 7 o'clock 15 units of regular insulin followed immediately by 45 units of protamine zinc insulin. Regular and PZI must not be mixed, as all is thereby converted into protamine.

The careful instruction which must be given these patients is not a job for the hurried, nervous physician. The patients must be thoroughly impressed with the fact that *once a diabetic, always a diabetic*. We caution them about injuries and infections, and they are drilled in the symptoms and signs of insulin reaction and coma. Since the symptoms of insulin reaction differ so widely in different people, and since the symptoms are different with PZI and regular insulin, we purposely produce, unless contraindicated by senility or debility, a mild insulin reaction while the patient is in the hospital. This can be readily controlled and has an inestimable educational value. We give them detailed typewritten instructions concerning the care of the mouth, teeth and feet.

It should hardly be necessary to add that insulin is the only drug which has any value in controlling diabetes mellitus, and that *by hypodermic injection only*. The various special starch- and sugar-free diabetic foods on the market, such as breads and desserts, have no value in the treatment of diabetes. If these foods require no insulin for their metabolism they have no food value, so that the stomach may as well be filled with so much sawdust.

Since diabetes varies widely in its severity, there are some cases which require no insulin, but may be controlled by diet alone. In all cases except those which will remain sugar-free when given adequate carbohydrate intake—at least 120 grams per day for an adult—insulin should be given.

Diabetic children are handled like adults, except that they require closer attention because of the wider and more rapid fluctuations in their blood sugar.

Coma was formerly the chief cause of death in diabetes, but since insulin it has given place to the disorders which result from peripheral vascular narrowing, as coronary occlusion and gangrene. In the past 5½ years we have treated seven cases of coma without a death. Although the means are

at hand for preventing and curing coma, due to the human factor we will always have coma cases to treat. *Speed* is the first consideration. The number of patients who recover after being in coma 48 hours is small. Very large doses of insulin should be given both intravenously and hypodermically, the amounts and time of giving being regulated by frequent blood sugar tests. One 62-year-old negro woman, 10 years a poorly controlled diabetic, had been in coma 32 hours when admitted with a blood sugar of 639. She had gangrene of the right foot with ascending infection and temperature of 104. She was given 80 units of regular insulin intravenously and 80 units of PZI hypodermically on admission, and thereafter regular insulin at frequent intervals until the blood sugar was normal. She received 750 units in the first 24 hours, but did not regain consciousness until 33 hours after treatment began. It is important that, in her case, she was still unconscious when the blood sugar crossed the normal line. It is difficult for me to believe the statement of some that coma may be treated without blood sugar tests as well as with them. I think all such patients should be hospitalized. In this case, we gave a total of 3000 c.c. of normal saline intravenously in the first 48 hours. We washed out her stomach and obtained a large quantity of bloody fluid. The fever remained high and the ascending infection got out of control, so that a guillotine amputation was done three inches below the knee. Fever dropped to normal within 24 hours, the insulin requirement dropped in nine days to her usual maintenance dose and the stump was a beautiful healthy granulating wound in two weeks. This patient subsequently had a Gritti-Stokes amputation to make a better stump and regained normal health as far as the diabetes was concerned to die 4½ years later of a cerebral hemorrhage.

Otherwise healthy diabetics may be carried through pregnancy. They should be warned of the increased likelihood of their offspring having the disease. The biggest danger now is the fetal mortality, but we think this can be greatly reduced by very careful regulation during the pregnancy plus the *high* or *normal* carbohydrate diet.

We have a record of one case of diabetes complicated by hyperthyroidism which was successfully treated by subtotal thyroidectomy, in conjunction with careful diabetic care.

We have one case of fatty-tissue atrophy from PZI. The patient has been taking 34 to 44 units daily for the past four years, and presumably the atrophy resulted from making the injections too close together. The cosmetic effect is the only factor which disturbs the patient.

We have not encountered any insulin-resistant case, unless the hyperthyroidism patient should be so considered. There was one patient, the same that developed the fatty-tissue atrophy, who had an urticarial rash after each dose of Squibb's PZI. The rash did not occur once after she was changed to Lilly's.

We have carried many patients through minor and major operative procedures without incident, with both local and general (ether) anesthesia. Several blood sugar tests are made routinely immediately before and immediately after the procedure, and whatever necessary is done to keep the blood sugar between 100 and 170—otherwise diabetic routine as usual.

During acute non-diabetic illnesses, our sheet anchor is to maintain the blood sugar between 100 and 170 by injections of insulin, or glucose, or by giving food in whatever manner and amount is necessary to accomplish that end. Many factors enter into such cases.

The blood sugar cannot be arbitrarily reduced to normal levels in some cases, especially old arteriosclerotics or those accustomed for a long time to carrying a high blood sugar. One 75-year-old woman showed symptoms of insulin reaction every time her blood sugar went below 220, even though she was still spilling sugar at that level.

Lastly, a few words about the old diabetic with sclerosed peripheral arteries. We can't hope to make young people out of old ones, so we have to do the best we can, largely by indirect means. Secondary changes occur in areas of reduced blood supply, which, among other things, increase the likelihood of infection. Diabetic feet must be kept warm, clean and dry. Injuries, especially breaks in the skin, must be avoided at all costs. In spite of all precautions, however, one day on a foot a blister will appear which may disappear, to soon reappear in the same or another place, but which sooner or later will give trouble. When gangrene develops, sometimes excision back to relatively healthy tissue with wounds left wide-open and a sulfonamide locally may give surprisingly good results. In others, ascending infection occurs in spite of everything, with high fever and a general toxemia. The guillotine amputation is the best answer we have for this, the site of amputation depending on circumstances, mostly in the case of the lower extremities either just above or just below the knee. The extremity is cut squarely off with no attempt whatever to make a stump and with a minimum of sewing—only enough to control bleeding. The infectious material follows the line of least resistance and flows out the end of the stump. Clean healing has followed each of the eight such operations we have done. In only one, the first one, was there any attempt subsequently to improve the stump. The others resulted in good tough stumps, as is illustrated by the typical case of the patient I have brought with me today. I do not recommend this operation except in the type of case above described.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

INTERTROCHANTERIC FRACTURES IN THE AGED

In the aged intertrochanteric fractures, especially multiple fractures, often complicated by oblique or spiral fractures extending down, always constitute a serious problem.

Where an attempt is made to maintain the bones in position by means of traction and splints of any type we have to contend with so many factors that the problem is often almost hopeless.

People of this age do not stand traction well. The adhesives may cause trouble with the skin. The slightest pressure may cause ulcers, and confinement in one position may produce a number of complications which may result in the patient's death.

To keep a person of advanced years flat on the back in bed in a plaster splint, even though the patient is moved about frequently, is apt to prove a menace to life. Pressure sores, trophic ulcers, pulmonary complications, and various other things may follow.

In these patients where the general physical condition is such that the slightest overload may be the last straw that breaks the camel's back treatment must reduce the danger of complications to the minimum and at the same time enable the patient to sit up and be moved around. Anything short of this makes the outlook gloomy.

For many years we have used in cases of intertrochanteric fracture, especially multiple, a combination of Smith-Peterson nail inserted into the neck of the femur and an angle bar to maintain the proper relationship between the neck and the shaft of the femur. It is necessary to keep the proper angle of the neck of the femur in order to prevent shortening of the leg.

The normal angle of the neck of the shaft is 127°, with considerable individual variation, and for this reason it is advisable to study the well side and try to reproduce the same angle on the injured side. This can be accomplished by angle bars arranged at different angles.

In the aged sometimes there is a definite coxa vara or degrees in the angulation of this joint which can best be determined by an accurate röntgenological examination of the uninjured hip. A number of patients are brought in with injury to the hip in which any treatment other than just making the patient comfortable is obviously hopeless. In such cases we would not, of course, advise any attempt at treatment other than that necessary in order to give the patient the maximum of ease.

We have noted, however, over a period of years that, in patients of almost any age where the general physical condition is fairly good, by open reduction, insertion of Smith-Peterson nail and placing an angle bar to hold the femur in position, we can often get union and such a good result that the patient can walk again almost as well as before the injury. Such a large number of such patients past the age of eighty have had intertrochanteric fractures treated in this way as to encourage us to use this with greater and greater frequency.

Only recently a patient of eighty-nine and another of ninety-four years of age, admitted within a day or so of each other, received the same treatment and both recovered promptly and were able to return home in two weeks. Of course, the fractures were not entirely healed, but they were in good position and the nail and bar were so well anchored that the maintenance of the bones in proper position by internal fixation as to promise good result. This illustrates the point that no matter at what age such a fracture occurs, if the physical condition is fairly good there is lively hope.

The great advantage in treatment of this kind is that the patient can move about in bed, can sit up, can move the foot and knee, can be placed in a wheel-chair soon after the operation if necessary. Allowing the patient to sit up or to move about or be placed in a wheel-chair has a profound influence upon the patient's chances of recovery. The patient feels that doctor is hopeful and that the outlook is good, and becomes more optimistic; the appetite is better; improvement is rapid—all of which has a great beneficial influence upon the healing of the fractured bone.

There is another factor, and that is the economic side of it. A patient who remains only a short time and then is able to return home and be taken care of by the family is relieved of a great expense. A long period of hospitalization is not necessary. Special nurses or attendants are not necessary. Recovery is more rapid. There is less pain, less mental anguish. On the whole the patient's outlook is so much better than ever before that we feel that practically every patient who has a fracture of this kind should at least have the opportunity to recover afforded by internal fixation.

Of course, the patient whose physical condition is such that any attempt to maintain the fragments in position or do anything else is impossible is obviously hopeless; but where there is the slightest hope a sustained attempt should be made to reduce the fracture and maintain it in position by internal fixation such as we have described.

The tissues of these patients bear metal much better and healing is usually far more prompt and satisfactory than one who has not tried the method would expect.

An important factor in treating patients of this kind is to have well-trained, coördinated action between the operating room group and the x-ray department, working in close harmony with the surgeon. This greatly simplifies the operation and eliminates much of the waste of time ordinarily consumed in the average hip joint operation of this type.

Every patient so treated should have the benefit of every possible aid in diet, medicine, physiotherapy, or anything else that promises to facilitate recovery.

Moving the patient about in bed immediately, getting him up in a wheel-chair the first day or so if at all possible, massage, supplementary vitamins —all these things are indicated.

Regarding the anesthesia which is used for this surgical procedure, we have used spinal, local, pentothal, and combinations of spinal and local with pentothal. In the very aged pentothal is the best anesthetic as it apparently does not disturb them in the least. A small amount of local anesthetic injected along the line of incision may be of help. We have done a number of these under spinal anesthesia alone. However, pentothal sodium, of which only a minute quantity is required, is quite sufficient for this operation. Any drug that lowers or raises the blood pressure, or affects the patient adversely in any way, should be avoided.

Fractures of the hip joint in the aged present great difficulties from almost every viewpoint. Aged patients are not good risks. As a rule they do not stand surgery well. This method of treatment, however, has made it possible for many of the very aged to be up and around and walk where otherwise at best all they could hope for would be to spend the rest of their lives in bed, suffering extreme pain from a non-united fracture of the femur, and a multitude of ills prone to develop when an old patient is kept in bed for any cause.

VITAMIN FILMS IN COLOR

During the past year silent motion pictures in color, describing certain vitamin deficiency diseases, made available by Eli Lilly and Company, Indianapolis, for showing before medical groups under sponsorship of a physician, have been in continuous demand. One film deals with deficiency of thiamine chloride (beriberi), another with nicotinic acid deficiency (pellagra), and the third with ariboflavinosis. New prints have been placed in circulation and are now ready for loan. These films deal mostly with treatment by diet and specific medication.

The films were made at the Nutrition Clinic of the University of Cincinnati at the Hillman Hospital, Birmingham, Alabama. Subsequently, these investigations became a coöperative project between the Departments of Medicine of the University of Cincinnati and the University of Alabama, and the Department of Preventive Medicine and Public Health of the University of Texas.

DEPARTMENTS

TUBERCULOSIS

J. Donnelly, M. D., *Editor*, Charlotte, N. C.

ACUTE PULMONARY ABSCESS

Acute pulmonary abscess, one of the most serious infectious conditions which may involve the lung parenchyma, may follow pneumonia, the inhalation of infectious material during operations on the nose and throat, bronchial obstruction from the presence of a foreign body, or may begin from what appears at first to be an ordinary chest cold. When the condition is sufficiently advanced the cough is much increased, and there is usually increased sputum which is often heavily blood-streaked and foul smelling, but is negative for tubercle bacilli. The temperature is considerably elevated, and there are frequent chills and chilly sensations. X-ray films must be made in order to complete the diagnosis, and locate the diseased area, the size and condition of this area being important. Such a potentially serious condition naturally requires immediate and, as thoroughly as possible, effective treatment. In past years there has been some difference of opinion among medical men as to the proper method of procedure in handling these cases, some preferring repeated bronchoscopic drainage of the abscess cavity, others advocating surgical drainage of the abscess through the chest wall. There have been a number of earlier reports which favored artificial pneumothorax as an effectual treatment in pulmonary abscess, but later this method came into disrepute with a number of authorities, one of them stating in his report that artificial pneumothorax in the treatment of lung abscess had proved unsatisfactory, that it had limited application and was often attended by the danger of pyopneumothorax. Another report stated the use of pneumothorax might cause a kinking of a bronchus draining the abscess and thus hinder rather than assist drainage.

At this time there are very few advocates of the pneumothorax treatment of lung abscess, but, of these few, W. D. Tewkesbury has remained loyal to the method, and his results by means of its use are worthy of note. This author has an article in a recent issue of *Diseases of the Chest,* explaining his procedure and quoting statistical figures illustrating his results. Dr. Tewkesbury rendered his first report in 1917, and in this report he discussed the cure of two cases of acute lung abscess by the use of artificial pneumothorax. In 1918 he reported ten cases and of these six (60 per cent) were cured, two (20 per cent) were temporarily cured,

and two (20 per cent) died. In 1925 he reported on 35 cases treated by the same method. Of these, 28 patients (80 per cent) made a complete recovery. In three cases the abscess ruptured into the pleural cavity, and these had to undergo surgical drainage through the chest wall, but all three were cured. Four of the thirty-five patients died, a mortality of approximately 10 per cent.

The author feels that artificial pneumothorax has a definite place in treatment of lung abscess, but he stresses the need for injections of only 150-200 c.c. of air given at 2- to 5-day intervals, instead of the larger amounts used in the treatment of pulmonary tuberculosis to obtain lung collapse. He states that drainage of the bronchi connecting with the abscess area is the result to be aimed at in contradistinction to the collapse necessary in the treatment of pulmonary tuberculosis, in which disease larger amounts of air are given for the purpose of obtaining bronchial kinking and atelectasis. He quotes Coryllos' long maintained contention that this kinking of the bronchi and lung atelectasis explained the closure of cavities. The author contends that little or no anatomical collapse of the lung is desired in treating lung abscess by means of pneumothorax, and hence only very small amounts of air should be given. He believes that the poor results obtained by many physicians in treating pulmonary abscess are due to too large doses, with too great an amount of collapse of the lung, leading to bronchial kinking with more or less atelectasis, and to rupture of the abscess through the pleura. Since this method of treatment has been used by men accustomed to the use of pneumothorax for the closure of tubercular cavities, it was thought by them that the same procedure was indicated in the treatment of non-tubercular abscess. In the author's opinion this is the error that has discredited this method of treatment for lung abscess. The author further states that the reason for such small amounts of air, with practically no lung collapse, producing such dramatic results in very sick patients, is rather difficult to explain, but that clinically the method promotes good drainage of expectoration, and this materially aids recovery.

In the beginning of treatment the author recommends an initial injection of 75-300 c.c. of air in order to partially reduce the intra-pleural negative pressure. Dr. Tewkesbury includes in his paper the fairly complete reports of the treatment of five patients, with the amounts of air given at each treatment, and the time intervals between treatments. The amounts of air given varied between 100 c.c. and 350 c.c., the majority of them being between 100 c.c. and 250 c.c. The time intervals between treatments varied between 2-8 days, the shorter intervals being in the first 15-20 days of treatment. The results of treatment in all but one of these cases was uniformly good, the reduction of fever and amount of expectoration being satisfactory. Three of the five cases had acute exacerbations of fever and increased sputum during treatment. The continuation of treatment, however, rather quickly cleared these symptoms up. The one case classed as an unsatisfactory result could not be really listed as a failure of the treatment. This man had been under treatment for 18 days and had been given six injections of air, at intervals of 2-7 days and in amounts of 125 c.c. He was then free of symptoms and the fluoroscopic examination showed much improvement. At his last visit he insisted on accepting a government job that he "had to report for or lose," and this he did against medical advice. About three weeks later the x-ray showed some increased density in the abscess area and pneumothorax was attempted again, but no free space was found. About three weeks after that visit the patient reported a return of the cough with expectoration having a foul odor. He was later operated on and the lung drained, but the same day he had a fatal hemorrhage from the wound.

In summarizing, the doctor states that he has treated 45 cases of acute pulmonary abscess with artificial pneumothorax since 1916, with results of recovery in 35 cases, a percentage of 75. Four patients have died, a mortality of 9 per cent. He reiterates that, in his opinion, the bad results of the treatment noted by other observers have been due not only to the use of too large and too frequent doses of air, but also to attempts to treat chronic abscesses of over two months duration. He remains of the opinion that the use of artificial pneumothorax has a definite and important place in the treatment of acute pulmonary abscess.

PUBLIC HEALTH

N. Thomas Ennett, M.D., *Editor*, Greenville, N. C.

MILESTONES IN NORTH CAROLINA PUBLIC HEALTH

(Continued from last month)

1932—The International Health Board awarded a scholarship to Dr. J. C. Knox for a year's special Public Health work at Harvard and to Dr. R. T. Stimpson for a year's special work in the School of Hygiene at Johns Hopkins. On account of reduced appropriations many activities carried on in previous years had to be curtailed or discontinued. The death rate in N. C. for 1932 was 9.6 per 1,000 population—the lowest death rate ever before recorded in the State, this

in the third year of the great financial depression.

The infant mortality this year was 66.4 per 1,000 live births—so far the best record the state has ever made. The maternal mortality remains high, and indications are that with decreased expenditures for maternal and infant hygiene the rates, particularly for infant deaths, will rise again, pushing the state back among those having an excessive infant death rate.

Expenditures for this year for all purposes by the Board were $315,276, of which amount $262,438 represented appropriations—just a little more than half of the total of expenditures made by the Board of Health for the fiscal year ending June 30th, 1930.

1933—The event of special importance to the Board of Health this year was the death of Dr. C. A. Shore, which occurred on February 10th. For 25 years Dr. Shore had been Director of the State Laboratory of Hygiene. He had built the work of the laboratory during these years up to a point where its prestige and usefulness was equal to that of any other public health laboratory in America.

By legislative action buildings of the State Laboratory of Hygiene are hereafter to be known as the Clarence A. Shore Laboratory in memory of his distinctive service. A few weeks after the death of Dr. Shore, Dr. John H. Hamilton, Director of County Health Work, of Vital Statistics, and of Epidemiology, was made Director of the laboratory work. Dr. Hamilton, on assuming his duties as Director of the Laboratory, resigned the duties of Director of County Health Work and of Epidemiology, retaining, with the assistance of Dr. R. T. Stimpson as statistician and field director, the Bureau of Vital Statistics. Dr. D. F. Milam, a consultant assigned to the State Board of Health by the International Health Board, was made Acting Director of the Bureau of Epidemiology in place of Dr. Hamilton. Dr. Milam had as his assistant Dr. J. C. Knox. Dr. M. V. Ziegler, consultant assigned to the Board by the U. S. P. H. Service, assumed the duties of Acting Director of County Health Work to succeed Dr. Hamilton.

The Legislature, meeting in January for an extended session, made drastic reductions in appropriations to all state health work and reduced the salaries of all state health employees. This was said to be necessary in order to balance the state budget and to maintain the state's credit. The total of expenditures for the Board of Health this year, that is, for the fiscal year ending June 30th, were $291,786. Of this amount $225,274 was appropriated by the Legislature. It will be noted that this sum was less than half of that appropriated and spent for the fiscal year ending June 30th, 1930.

1934—The event of greatest importance to the State Board of Health and to the health work throughout the state in this year was the death of Dr. James M. Parrott and the election of Dr. Carl V. Reynolds as his successor. Dr. Parrott assumed the duties of State Health Officer on July 1st, 1931. He was stricken with an attack of angina pectoris early in Decembebr, 1933. The last eleven months of his life were ones of recurring illness and courageous fortitude in remaining at the helm of the Board of Health work. His death occurred Wednesday evening, November 7th, 1934.

Dr. M. V. Ziegler, who had also been lent by U. S. P. H. Service as a consultant in the Division of County Health Work and who had been Acting Director of that Division, was transferred back to Washington about the first of September. Dr. R. E. Fox, who had completed a postgraduate course in the P. H. School of Harvard University, was made Director of the Division of County Health Work.

On November 10th, at the time Dr. Reynolds was elected State Health Officer, Dr. G. M. Cooper was elected Assistant State Health Officer.

(To be continued)

UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

CARBUNCLE OF THE KIDNEY

Mooney,[1] who has added another to the 102 cases of carbuncle of the kidney collected by Spence and Johnson in 1938, makes the point that this diseaes is now achieving recognition as a significant clinical entity. He defines carbuncle of the kidney as "a circumscribed, indurated, multilocular suppurative process in the renal parenchyma, usually caused by staphylococcus aureus carried from a septic focus to the kidney by the blood stream." He adds that perinephritis is always as-

1. Mooney, Ken. The Treatment of Carbuncle of the Kidney. *Jour. Urol.* 47: 249-254, March, 1942.

sociated and perinephric abscess in about one-third of the cases.

Mooney's case aptly illustrates ". . . . some of the diagnostic difficulties and vagaries of carbuncle of the kidney, and demonstrates in a strikingly graphic manner the value of conservative surgery in this malady in selected instances." The insidious onset, typified by pain and tenderness in the affected renal area, and signs of sepsis, may be spread over weeks. Urinary symptoms are typically absent and the most helpful diagnostic aid is excretory or retrograde urography.

The onset, in Mooney's case, was typified by a dull aching pain in the abdomen for a period of six weeks. While a firm smooth mass was found in the right upper quadrant, fever, urinary and gastro-intestinal symptoms were all absent, on first examination, and laboratory tests were normal. Cystoscopy and pyelography showed a normal bladder. Both excretory and retrograde pyelograms were normal on the day of admission, but an upright retrograde pyelogram done three days later ". . . showed slight if any mobility of the right kidney."

Pneumoperitoneum demonstrated a mass below the liver, but peritoneoscopy revealed a normal peritoneal cavity.

Pre-operative diagnosis was perinephric abscess and Dr. J. C. Alexander drained a right perinephric abscess from the pus of which staphylococcus aureus was characteristically cultured.

The patient re-entered the hospital three months later with a temperature of 100 degrees F. and pulse 120 and an obvious loss of weight and strength. As before, the only abnormal findings were in the abdomen. A firm, smooth, rounded moderately tender mass in the right upper quadrant extended medially to the midline and downward toward the iliac fossa. Urinalysis: Urine clear, albumin and sugar negative. 7-10 leukocytes per low power field, 1-3 erythrocytes and a few epithelial cells. Sedimentation rate suggested a markedly active process.

Cystoscopy and pyelography were repeated. The bladder and left kidney again appeared normal but comparison with the original pyelograms showed dilatation of the right kidney pelvis as though surrounding a mass. On this occasion renal carbuncle was pre-operatively diagnosed.

Dr. A. I. Folsom exposed the right kidney through a right loin incision to find a carbuncle (measuring 2¾ by 1¼ inches) in the upper third of the cortical portion of the kidney. Sulfathiazole effected rapid clearing of purulent drainage.

The patient, who was discharged on the 28th post-operative day, gained sixteen pounds and has a firm wound with no masses palpable and normal urine.

Comment

The idea that nephrectomy is routinely indicated for carbuncle of the kidney could be advantageously revised in the light of cases like this. The case also illustrates the fact that ". . . simple drainage of the perinephric abscess is inadequate when a true carbuncle of the kidney is the underlying pathological process." With reasonable suspicion of a carbuncle it is better to mobilize the kidney and make adequate exploration.

Except in those instances when the patient is exhausted from infection, ". . . enucleation, incision and drainage or partial resection is the procedure of choice." The carbuncle may be shelled out with ease and, though bleeding may be profuse, the use of gauze packing and a drain will assert control.

With sulfathiazole now available as a powerful post-operative aid (used both orally and locally), conservative surgery is more readily to be considered.

DERMATOLOGY

For this issue RAY O. NOOJIN, M.D., Durham, N. C.

SYCOSIS VULGARIS

THIS CONDITION, commonly referred to as Barbers' Itch," is a chronic septic folliculitis, which involves principally the bearded and moustache areas of the face. There seems to be a decided individual predisposition in those who acquire this infection in that they almost invariably tend to show progressive involvement of contiguous bearded areas whereas their infection is seldom contagious to others.

The affection most often starts on the upper lip and if uncontrolled may involve most of the hairy areas of the body. The primary lesion is a superficial follicular pustule. The eruption is usually covered with a crusted serous exudate. Commonly, the appearance of the discrete pustular follicle with its extruding hair suggests the appearance of the surface of a fig, hence the name sycosis. The course of the disease is decidedly chronic. Ordinarily one may see areas of healing and areas of new infection in the same patient. Only adult males are usually affected.

In spite of the fact that serous exudation is usually present, suggest streptococcic infection, the organism, usually responsible is *Staphylococcus Pyogenes Aureus*. Although there seems to be a definite underlying individual predisposition, there seem to be no other abnormal factors constantly present.

The diagnosis may be suspected at once in a patient with a pustular folliculitis of the beard. The presence of a serous crust ma ysuggest Bockhart's impetigo. However, by epilating one of the chronically infected hairs the entire follicle which appears as a glassy sheath remains attached to the root of the hair and is lifted out easily. This does not occur in impetigo. Tinea Barbae or mycotic folliculitis tends to be more inflammatory and deeper-seated. The demonstratio nof fungi by culture or their presence in or on the infected hairs determines the diagnosis.

Histologic sections taken through a typical early lesion reveal a superficial folliculitis with leucocytes, serum and bacteria present in the mouths of the follicles. The surrounding dermis usually shows a decided reaction. Later the purulent reaction progresses deeper into the folicle and adjacent sebaceous glands. In spite of the suppuration the hair follicle is usually not destroyed.

The infection may be stubbornly resistant to therapy and very rarely involutes without treatment. One of the more satisfactory therapeutic regimes includes the local application of 5 per cent ammoniated mercury ointment to the affected area at night. To be efficacious the ointment must be rubbed into the beard well and not merely spread on. During the day warm 1:6000 potassium permanganate compresses should be applied constantly, being changed every two hours. The debriding effect as well as the antiseptic effect of the compresses is particularly desirable. If ammoniated mercury ointment is contraindicated or ineffective, 5 per cent sulfathiazol ointment or half strength Quinolor Compound Ointment may be substituted. One per cent Gentian Violet in 20 per cent alcohol is sometime seffective and is best applied locally once or twice daily during the period that the compresses are being used; 0.5 per cent Burow's or 3 per cent Urea Hydrochloride compresses may be tried if the potassium permanganate solution doesn't produce improvement.

Of considerable importance is the manual epilation of the infected follicles. This may be carried out daily by the patient with epilating forceps. If deep follicular involvement has occurred the hair and glassy sheath may be lifted out very easily. The patient should shave daily and by shaving toward the center of infection further spread of infection is less likely. Small fractional doses of röntgen therapy locally are efficacious in certain recalcitrant cases in the hands of one specially trained in its use. Temporary or permanent epilation by röntgent therapy carry very definite dangers and are not to be recommended.

In view of the evident personal equation in these patients with regard to their susceptibility to infection general measures must not be neglected. Generalized daily ultraviolet light, natural or artificial, frequently seems to promote improvement. Vaccine therapy in most cases has proved disappointing, however, administration of staphylococcus toxoid may be of benefit in an occasional resistant case. Vitamin therapy is not apparently routinely indicated unless hypovitaminosis is apparent or suspected. Intensive search for foci of infection and their subsequent elimination, if found, is definitely indicated. The use of sulfadiazine or sulfathiazole by mouth for one or two weeks in some cases is of especial benefit.

The prognosis in these patients is good in most cases if they persistently carry out the suggested measures. In most cases it is well to prolong treatment at least two weeks even after recovery has apparently taken place to prevent exacerbation.

THE INJECTION TREATMENT OF HEMORRHOIDS
(From Page 660)

My own special needle illustrates for the first time the principle of retrograde injection. Insertion of the needle point is made at the upper pole of the hemorrhoid. *Penetration* is produced by *drawing* the needle point *toward* the operator. *Withdrawal* of the needle is effected by *pushing* the shaft.

Should further therapy be required to obliterate a particular varicosity, by central or inferior pole injection, this is best performed with the needle designed for that purpose. Th needle is so curved that the injection tip can penetrate only to a depth of one cm.

SURGERY

Geo. H. Bunch, M. D., *Editor*, Columbia, S. C.

OF THE STONE

Few physicians know the relative importance of urinary stone in the surgery of yesterday. Even when surgical endeavor was limited largely to the repair of traumatic wounds the operative removal of stone was done. The Hippocratic oath warns against indiscriminate cutting for the stone. Before the days of asepsis and of anesthesia, before the discovery of the x-ray, the development of the cystoscope and the advent of the urologist stones could be identified only by the use of a metallic urethral sound. Stones in the upper urinary tract were seldom diagnosed, for recognition based upon clinical findings alone was uncertain and unsatisfactory. Under such conditions it is no wonder that operation was done only as a last resort after the patient had long endured pain and progressive invalidism.

Perhaps Judge Jeffreys, who was appointed Lord Chief Justice of England in 1683 and who presided over the famous court of bloody assizes, should not be too severely condemned for his severity and cruelty when it is remembered that he was himself

tortured day and night with bladder stone which finally killed him. Samuel Pepys, Father of the Royal Navy, and author of Pepy's *Diary,* an installment of a modern paraphrase of which appears every week in tonics and sedatives (*J. A. M. A.*), was operated upon for stone after years of suffering.

Cheselden, a London surgeon, first advocated removal of bladder stone by a lateral perineal incision after passing a staff into the urethra as a guide. This greatly lessened the mortality rate of lithotomy and the incidence postoperatively of urinary incontinence. There is in the pathological museum of the Royal College of Surgeons a calculus bearing a silver plate upon which is inscribed, "This Stone was extracted by Wm. Cheselden, Esq., from Willm. Nightingall on Apl. 20, 1737, its weight Six Ounces & half, and in Circumference Nine Inches. the Operation was effected in half a minute."

In the earliest *System of Surgery* published in the English language, written by Benjamin Bell of Edinburgh in 1784, 163 pages are devoted to the subject, "Of the Stone." He says particles of blood or of coagulable lymph are most frequently found to produce nuclei whose effect in the formation of calculi "in the urinary passages especially, appears to be so great that it may be doubted whether a stone is ever known to form in these parts without the intervention of the cause; for, however large the quantity of earth contained in urine may be, it would probably all flow off by the urethra, if it were not detained by the accidental introduction or formation of a nucleus."

"Upon the whole we may conclude that when we are not directed by the appearance of a tumor to the part which ought to be opened, the uncertainty of the ground upon which we proceed when we undertake this operation—the difficulty of performing it—and the very imminent danger which attends it, will more than counterbalance any advantage which can ever be expected to be derived from it; and that for this reason the operation of nephrotomy will never probably be received into general practice; however, it may be recommended by some writers, and warmly supported by others who, in order to raise a reputation which they might not otherwise obtain, will sometimes step forward and propose with confidence what no practitioner of character would think right to attempt."

THERE IS A CITY OF REFUGE

Editorial Column of *Cincinnati Jl. of Med.*, Dec.)

Henry McLemore reports from the still civilized city of New Orleans: "Here is America's last stronghold against the vitamin. It is the one town left where the cooking is based on taste, and not on whether it is so healthful that it will make you feel able to lick your weight in wildcats. Vitamins A, B, C, D, E, F and G give New Orleans a wide berth, because word has gone out as to what happens to them here. Chefs of other cities treat the vitamin as if he were a royal prince with a weak heart. He is not boiled enough to hurt him, and they never let the poor little fellow get friend. Not so, 'way down South. The chefs give the vitamin a going-over that makes a police third-degree seem like a christening. They slap him in the face with sauces. They frizzle, fry and fricassee him. When he yelps "uncle" they shut him up with a chunk of butter, a cupful of cream and a dash of cognac. When they get through with the vitamin, he won't make your muscles grow, but he'll make your taste buds break into bloom."

HISTORIC MEDICINE

MEDICINE AND THE FORTY-NINERS

From *Clinical Excerpts,* 8: 227, 1942.

DURING the early days of the California Gold Rush an English surgeon, Dr. Edward Willis, came to Placerville, then known as Hangtown, formerly Old Dry Diggings. Hangtown was a roaring camp at the site of a rich find about in the center of the Mother Lode. Dr. Willis established himself in a tent which he divided with a piece of sail cloth into one part for his home and the other part for his surgery containing, spread out on rough shelves and a table, bottles of medicines, dental and surgical instruments, chemical retorts, a microscope, a stethoscope, a large jar of leeches and some splints. Outside was a beautiful sign inscribed in gold letters "Surgery. Dr. Edward Willis, M. R. C. S. Surgery and Physic in all branches. Sets bones. Draws teeth painlessly. Bleeds. Advice gratis."

In the beginning all did not go well with Dr. Willis. An alcoholic by the name of Hullings had established himself in the camp as a medical practitioner although it is probable that he had never had the benefit of any medical school education or possessed a diploma. He was usually too drunk to feel a pulse. The first practitioner who set himself up in a camp believed that a newcomer was jumping his claim, and acted in the same rough and ready manner as a miner whose priority rights had been violated. Hullings ordered Dr. Willis to leave town and, when the latter indignantly refused to do so, he called at the Englishman's demanding to see his diplomas. Willis felt obliged to comply, whereupon Hullings tore the certificates across the middle and deluged their owner's face with a jet of tobacco juice. The result was a duel in which Dr. Willis killed Hullings.

The scanty rations were abdominable, with no fresh food; rains repeatedly drenched to the skin and made life miserable in the wet and cold tents; widespread alcoholism, and prostitution contributed to the unhealthy mode of living.

Dr. J. B. D. Stillman of New York partook extensively of the life in the Gold Rush. He wrote:

"The vegetation is too scanty to furnish the highly concentrated or putrid miasm of the tropics; but that the whole valley contains, in an eminent degree, the intermittent malaria, there can be no doubt, and that it will continue so until the greater part of its surface shall be renovated by the plough.

"Money, money is the all-absorbing object. What can be expected from strangers when men's own friends will abandon them because they sicken and become an encumbrance? There is no government, no law. Whatever depravity there is in man's heart now shows itself without fear and restraint.

"Hundreds were coming in daily, sick, destitute and almost starved. They met here with harpies to prey upon them, and they were often compelled to sell their teams for food enough to last them down to Sacramento City. Quinine was in great demand, for which they charged $1 per grain."

These conditions led to widespread rheumatism, scurvy, injuries from personal violence and accidents, various diarrheal ailments, dysentery and malaria. The nervous strain of those wild days led to 4200 murders, 1400 suicides and numerous deaths at dueling.

Stillman gives an eyewitness account: "As we advanced, the number of the sick increased, and at every watering-place were many unable to continue their journey or look after their cattle, and dependent upon those passing for water, whilst every wagon was encumbered with those unable to walk."

To add to all this misery came a cholera epidemic. Sweeping in from the Atlantic seaboard it reached Independence and St. Joseph, Mo., in the early spring. It took a heavy toll at these starting points and accompanied the wagon trains as they slowly forged their way across the plains, wiping out entire families and marking each camp site with a fresh grave. The epidemic manifested itself in Sacramento during October and November, 1850, slaying 10 per cent of that city's population including 17 of its 50 physicians. Within six days of its appearance it became almost imposible to find enough people able to bury the daily toll of 150 corpses, although among those actively aiding the victims was the future state governor, John Bigler, who "carried a lump of camphor now in his pocket and anon at his nostrils, braved every scene of danger." The epidemic finally reached into all of California's settlements and mines, crippling the shipping at San Francisco by October and killing 5 per cent of that community's population.

The epidemic receded in 1851 and flared anew in 1852. It was estimated that more than 90,000 persons arrived in California during the latter half of 1849 and that 20 per cent of these succumbed to disease or trauma within six months of their arrival in the promised land.

During the years of the Gold Rush the arriving crowds were preponderantly male, among whom more than one in 300 were doctors, totaling 1300 to 1500. As the medical men were also afflicted with gold fever their proportion range high in the camps; in Rich Bar, for example, there were at one time 29 doctors among the 1000 inhabitants and in Weaverville four in a population of 1000. Some were men who came after achieving reputations in their home communities but the majority were country boys who had worked as apprentices or attended small medical schools for a year or two. Anyone could take a hand and the sky was the limit in the fee schedule. For the most part the doctors stampeded to the mines as prospectors, here and there practicing a little but spending most of their time digging in the earth.

In 1849 San Francisco was an ugly collection of wooden houses, saloons and stores surrounded by thousands of cabins, booths, shacks and tents. When the weather was wet the mud rendered the streets practically impassable and when it was dry there were thick clouds of dust.

Dr. Stillman says: "I took up my residence at Sacramento about the 1st of November, just as the rains had fairly set in. The condition of the great mass of the people was very uncomfortable. The principal food that had been used since their arrival in the country consisted of salt pork, hard bread, flour, fresh beef, venison; dried fruits and potatoes could be had at a high price, and grapes grew wild along the banks of the rivers in great numbers; but, from ignorance and mistaken economy, the greater part used no vegetables, the importance of them not being sufficiently understood, and the population of the mining regions was almost entirely without them, from the difficulty of transportation.

"The high price of building material put comfortable shelter beyond the reach of all, except a favored few. With no covering but their tents, or beds but their blankets, barely raised from the wet earth, clothing filthy and covered with vermin, their condition when sick was wretched in the extreme. The immigrants were exposed to all the hardships of a camp without the discipline of an army, and the comforts or conveniences which the foresight of the quartermaster provides, or the intelligence and care of a medical staff. Each man was thrown upon his own resources, ignorant of the dangers by which he was surrounded and insufficiently provided to meet them. Disappointed in his prospects, and dejected in spirits, he fell an easy victim to a climate he had been led to believe the most salubrious in the world.

"The sick were often deserted by their friends to shift for themselves, or were shamefully neglected to despair and die. The ranks of the medical profession were crowded with pretenders, and a feeling of distrust was general where all were strangers, and caused many to reject all medical aid.

"A provisional government was organized, but, without resources, it could do but little more than furnish coffins. A debt of $12,000 was incurred for that one item alone. In April following I counted close to one thousand graves in the vicinity of Sacramento, over which the grass had not yet grown. The destitute were so numerous that the greatest exertions were required to furnish food necessary to support life, and large amounts were contributed by some of the more successful merchants. Nor were the unobtrusive and self-sacrificing efforts of many worthy members of our profession small. Drs. Cragin, Deal, Morse, Riggs, Bay, Higgins, and others, will not soon be forgotten by those who were the subjects of their charity, though no pen took note of their deeds or gave their names to the world. Some of them involved themselves seriously in their sacrifices to shelter and provide for the sick poor.

"About the middle of December, a suitable two-story frame building, which had been contracted for by Dr. J. F. Morse and myself, was opened for the reception of the sick, and an opportunity was presented to make a more intimate acquaintance with disease.

"From the 1st of January to April 1st, the number of admissions was sixty-four, immigrants from twenty-two different states; of these numbers that came by the way of Cape Horn and the Plains were about equal. They were well provided with warm dry beds, and though the wards on the main floor were filled with water by inundation, and afterwards so damp as to be unfit for use, our second floor was dry and well ventilated. They were constantly supplied with whatever we thought would contribute to their comfort or recovery, except milk, which was scarce."

CHANCRE OF THE GUM: A CASE REPORT

(J. F. Sadusk, Jr., & B. G. Anderson, in *Amer. Jl. Med. Science*, 203:397, 1942)

A 19-year-old woman complained of a sore, red spot on the gum above the left lateral maxillary incisor, which bled easily; there was an enlarged, tender cervical node at the left angle of the jaw.

The blood was 4-plus Kahn, 4-plus Wassermann with cholesterolized antigen, and negative Wassermann with alcoholic antigen. Repeated serologic tests were positive; darkfield examination of the lesion was negative for *Tr. pallidum*.

Following one intramuscular injection of 0.2 Gm. bismuth subsalicylate in oil, the patient was admitted to hospital for antisyphilitic therapy. Since January, 1940, the 5-day massive dose of arsenotherapy of syphilis by the intravenous drip method had been employed at the New Haven Hospital, and accordingly this method, with administration of 240 mg. Mapharsen daily (1200 mg. in 5 days) was carried out.

During this period, elevation of the gum surrounding the chancre was diminished and the surface of the lesion became smooth. Following this, there was return of a more normal pink appearance. Residual thickening of the gum ensued because of fibrosis and scarring. First serological change occurred four weeks after therapy and a complete seroreversal was obtained after 19 weeks.

OPHTHALMOLOGY

By Major H. C. Neblett
Medical Corps, United States Army

CHRONIC INFECTION OF THE TEETH AND GUMS AS A CAUSE OF STALENESS IN AIR SERVICE PILOTS*

When this paper was written the writer was the Flight Surgeon in charge at Langley Field, Va., and had under his care a large number of pilots composed of a rapidly changing flight personnel. During this period the bombing maneuvers were held off the Virginia capes under the personal direction of the late General William Mitchell. Here also was stationed an infant and struggling lighter than air unit, and during this period the maiden flight of America's first semi-dirigible, the ill-fated Roma, was wrecked off Hampton Roads on Feb. 21, 1922, with the loss of 34 killed and 11 injured of her total complement of 45 men. Up to that time, save for one similar accident to a British lighter-than-air craft at Hull, England, where the lives of 35 men were lost, no such loss of life had occurred in the annals of any branch of any country's Air Corps.

Since this paper was written the writer is cognizant of the fact that many radical changes have been made in the selection, examination and training of pilots of the Air Corps, and particularly in the ships they fly, so that a flyer of average ability in those could hardly qualify to pilot a modern fighter plane.

Despite the changes made in modern flying personnel and the planes they fly the same factors are at work against them that augmented or caused the disintegration of the mental and physical efficiency of pilots of other days. This paper is therefore submitted as it was originally written with the purpose in view of bringing to the attention of those interested a few medical observations of nearly a quarter of a century ago that may be of some value today to those in charge of Air Corps personnel.

The purpose of this paper is an attempt to show that chronic apical abscess and chronic periodontoclasia, either separately or combined, are not an

*Reprinted from *The Military Surgeon* for September, 1923.

unusual cause of staleness in air service pilots. Generally speaking, when symptoms and signs of the above condition are manifested in a flyer, the cause is not often suspected until later, when there may be evidence of an acute dental process present. In the interim the pilot may be temporarily disqualified for flying and kept under observation and treatment for such symptoms as slight headache, dizziness, gastrointestinal disturbances, loss of appetite, fatigability and distaste for flying. On the other hand, the condition is more often attributed to any one of the following factors or to a combination of them, namely, excessive flying, overwork in administrative details with close confinement and lack of exercise, and worry from whatever cause.

Any of the above named agents most probably played a very prominent part in causing neuro-circulatory disturbances in a large number of pilots during the recent war, and shortly thereafter, as the result of very obvious reasons. At the present time, including a year or two past, the causes referred to have been in a great measure eliminated through the mechanical perfection of air service equipment and matériel, through a clearer knowledge of the many essentials upon which the success of the service is based, and by the selection, both mentally and physically, of a class of men best suited for the duties of pilots. These, for the most part, viewed from the standpoint of their past experience and training in the air service, may now be considered seasoned flyers who should ordinarily react a great deal less to the agents mentioned than did the earlier type of pilot.

In the examination and selection of individuals for pilots, mental and physical perfection in them is essential in so far as is possible to be attained. On the whole, those essentials must conform to a definite standard of examination for all flyers. Yet in the qualification of pilots for the air service there is no one thing in their physical makeup which is given as little concern as the true condition of their teeth. These, for the most part, are of interest in so far as macroscopical evidence points to their general condition of soundness and to the required number necessary for the function of mastication. These having fulfilled requirements at the time of examination and acceptance of the pilot, frequently, they later become diseased, principally due to neglect on the part of the individual through disregard of personal dental hygiene and through lack of a frequent dental survey and treatment. A very broad latitude is therefore allowable relative to general dental requirements and to oral hygiene, with resultant disease of the teeth being frequently manifested. On the other hand, sinusitis, a deflected septum, diseased tonsils or enlarged turbinates that obstruct the respiratory channels are cause for rejection in an applicant until successfully removed, and in a pilot are a cause for temporary disqualification for the same reason until likewise treated. Again, diseased teeth or gums are rarely given attention by those concerned until the local symptoms become so severe that the dental surgeon is consulted for relief and treatment. During the interim the pilot may show signs and symptoms of staleness, the causative factor having been easily overlooked by the flight surgeon who had the case under observation.

From a study of the causes of neuro-circulatory disturbances in pilots at this post for a period of two years, a great part of which time they were working under unusual stress incident to bombing maneuvers, and test flying by day and night, with the necessary long hours of the air, and in application to administrative details, it was the exception rather than the rule to find a pilot who reacted unfavorably to the stress of circumstances by manifesting the signs and symptoms of neuro-circulatory disturbances as the result of the usual causative agents alone. On the other hand, during the two-year period mentioned, the writer found a relatively large number of flyers whose general symptomatology was indicative of neuro-circulatory disturbances caused by diseased teeth and gums. A brief history is submitted in each case found with the purpose in view of clarifying the points discussed above. The ages in these cases ranged from twenty-four to forty years with an average age of twenty-nine years.

Case 1.—Diagnosis, staleness. For a period of about three weeks did not sleep well, was irritable, slightly depressed and suffered with an occasional dull headache and some loss of appetite with pronounced distaste for flying. Blood pressure and pulse slightly elevated, exaggerated response of heart to exercise, reflexes and psychomotor tension slightly increased, Schneider index varying between 7 and 9 plus. A fine tremor of tongue and fingers present. The urine showed a faint trace of albumin with an occasional hyaline and fine granular cast. For nearly a year prior to this attack patient had suffered at intervals with pain of neuralgic type in left side of face and left shoulder. Examination of the teeth showed L. 6 to be sensitive and x-ray of which showed an apical abscess. Dental treatment gave prompt relief of all symptoms.

Case 2.—Diagnosis, staleness. Very marked type with a history of a neuropathic taint. This case had persisted for several months, and on account of his general condition during that time he had been disqualified for flying on several examinations. The following symptoms were noted: Breathlessness and exhaustion were constant. The latter was present mentally as well as physically upon slight exertion. Giddiness and headache not

of infrequent occurrence. The latter often severely attended with nausea and vomiting. Sleeplessness was marked at times and the patient was irritable and unable to fix attention. Psychomotor tension increased, peripheral circulation relaxed, pulse rate increased, pulse small and easily compressible; blood pressure varied from 102 to 114 systolic, systolic murmur at apex not transmitted; Schneider varied from plus 2 to 7; temperature slightly subnormal to 100° F., and there was an icteroid tinge of the skin. The leucocyte count was high with a considerable increase in the polynuclear cells. Visual acuity diminished, especially in the right eye with defective accommodation, and horizontal nystagmus bilateral. Loss of weight was gradual and progressive, and the patient was the subject of frequent attacks of acute coryza and bronchitis. Hospitalization was resorted to on several occasions where repeated examination and x-ray of the teeth finally resulted in finding apical abscess involvement of R-1, 2 and 3 with right antrum infection. Treatment of the abscessed teeth and drainage of the antrum resulted in gradual but marked improvement in symptoms with a rapid gain in weight.

Case 3.—Diagnosis, staleness. Infrequent mild attacks of staleness over a period of ten months manifested by slight loss of appetite, occasional slight headaches, mild degree of lassitude and nervousness with a moderate distaste for flying. About three months ago suffered a minor contusion to the left ankle, which was promptly followed by an acute arthritis of the joint. X-ray examination of teeth showed abscess in L-10 and 11. Removal of the cause resulted in prompt relief of the arthritis and improvement in patient's general condition.

Case 4.—Diagnosis, staleness. There was a history of injury in this case involving the lower jaw near the central incisors as the result of an airplane crash. In addition, this pilot had a peridontoclasia of long standing in that area. About a week following the accident the patient developed some pain and tenderness at the site of injury which cleared up in a short time without treatment. About six weeks later developed symptoms of staleness manifested by slight loss of appetite, nervousness and irritability. Patient did not sleep well, was more easily fatigued than usual, and there was lassitude and an indisposition toward doing the usual routine duties. Schneider index averaged plus 4. Pilot was placed in quarters under observation and treatment for a period of a week, during which time he developed pain and tenderness in the area of the incisors of the lower jaw. X-ray showed abscess formation in L-9 and 10 and R-9 and 10. Dental intervention directed to the cause resulted in prompt recovery.

Case 5.—Diagnosis, staleness. Throughout a period of one year this case presented frequent signs and symptoms of acute staleness. These attacks were usually ushered in with an acute coryza or acute bronchial symptoms. Not infrequently these conditions simulated a very distressing type of hayfever, more particularly if the pilot had been exposed to cold and wet or after protracted periods of flying. During three acute attacks of the above condition the pilot developed a very severe furunculosis of the left nostril.

Throughout the course of this case there was very gradual loss of weight, frequent digestive disturbances, a capricious appetite, periods of irritability and restlessness and rather frequent attacks of mild frontal headache. Fatigability was often complained of after moderate exercise. There were no other symptoms or signs demonstrable except a relative low Schneider index which was shown upon several examinations.

The general features in this case simulated pulmonary tuberculosis except that x-ray of the chest was negative, and there was no cough or clinical findings relative to the chest, and no temperature elevation. Finally, some pain and tenderness was felt in the region of L-5 and 6, the x-ray showing an apical abscess in both of these teeth. Prompt treatment of these relieved all symptoms in the case. Three months later patient had gained 15 pounds, with evidence of marked general improvement.

Case 6.—Diagnosis, acute staleness. For a period of two weeks pilot stated he had not slept well, was nervous and irritable, with loss of appetite and an indisposition to fly. During that time he was doing a great deal of flying and believed that his activities in that particular were the cause of his condition. Upon physical examination visual acuity, accommodation and depth perception were below the normal. The heart action was rapid, irritable and irregular with a decidedly poor response to exercise. The pilot was relieved from flying and put under observation and treatment, during which time a series of Schneider indices was made upon him. At the time the case was first seen the Schneider index was plus 7 and gradually declined to a minus 4 over a period of about two weeks. At this time there was local evidence of tooth involvement, the x-ray showing abscess formation in R-11 and 12.

Dental intervention gave a gradual relief of symptoms. The Schneider index a week later was plus 14.

Case 7.—Diagnosis, staleness. Over a rather protracted period of time this pilot had felt generally indisposed and had been treated repeatedly for mild attacks of gastritis, loss of appetite and headaches with giddiness. When examined, his heart action was found to be rapid and irritable with a poor response to exercise. He was pale, nervous and sweating under the axillae and in the palms of the hands. Test exercise showed considerable breathlessness and giddiness. There was a fine tre-

mor of the tongue and fingers and peripheral circulation relaxed.

Dental survey showed a defective crown R-4 with sensitiveness on percussion. X-ray of the tooth showed a large apical abscess. Prompt treatment of the cause resulted in relief of symptoms with a satisfactory convalescence.

Case 8.—Diagnosis, staleness. This pilot had been treated at infrequent intervals for about two months on account of very mild attacks of digestive disturbances with partial loss of appetite and symptoms of general indisposition. Finally, upon a very careful examination he was relieved from flying because of diminished visual acuity, a low Schneider index, abnormal reaction to the Barany chair test, and nervous symptoms with distaste for flying. At the time of this examination a sensitive crowned tooth in the upper right jaw was found. X-ray of this tooth showed abscess formation. Prompt removal of the tooth resulted in a satisfactory convalescence and marked general improvement. This pilot was very fond of athletics, particularly golf, but on account of general lassitude and fatigability following exercise he had given up participating in sports during the above period.

Case 9.—Diagnosis, staleness, acute. Symptoms and signs of staleness in this case were ushered in very abruptly. The pilot had been playing baseball for several weeks, and several days before reporting to the flight surgeon for treatment he had noticed that his vision was very poor, that he was very nervous and had been unable to sleep well for several nights. Examination of the patient showed considerable diminution in visual acuity bilateral, a very low Schneider index, acute nervous symptoms with irritable heart action and a continuous course tremor of the tongue and fingers. These symptoms were followed by loss of appetite, fatigability, lassitude and symptoms of toxic absorption. He was immediately relieved from flying and put under observation and treatment. At the time no local evidence of any tooth involvement could be found. Eight days later he developed a severe aveolar abscess of R-15 and L-15. Under prompt dental treatment directed to the cause, convalescence was quickly established with an early return to the normal.

Conclusion.—The general signs and symptoms in these cases, though somewhat varying in degree, are fairly constant in their presentation, yet their etiological factor may be very easily overlooked without a careful dental survey aided by the x-rays and blood findings in the case. Especially is this true when the general symptoms are mild, the condition protracted, and when there is little or no evidence pointing to tooth involvement, no history of injury to the aveolar processes. Other points of interest in these cases are that the subject is not infrequently a sufferer from attacks of acute coryza, symptoms of hayfever, neuralgic pains about the face or joints, and a tender point in the area of one or more teeth. Especially should old crowned teeth be looked upon with a great deal of suspicion as an etiological factor in these cases. Diminished visual acuity is frequently seen and is sometimes only demonstrable in the eye corresponding to the side with the involved teeth. The various other tests of the eyes may vary from those of the pilot's previous examinations, but they are usually within the prescribed limits. The Schneider index is very striking in these cases, varying from plus 7 or 10 to minus 2 or 3 with a common average of plus 5 or 6. The variation of the index seems to be principally dependent upon the acuteness or cronicity of the tooth infection, the amount of absorption of toxic material from the area involved, and the susceptibility of the individual to the effects of the toxins elaborated. With the elimination of the cause and the incident improvement in the patient the index rapidly rises. This is likewise true of the other features in the case.

In studying the present type of pilot in the light of the points discussed above, and basing one's opinion upon the fact that aviation is now on a peace-time status and that it is a definite vocation chosen by those therein engaged, it seems reasonably feasible that the flight surgeon in the care and treatment of flyers should be thoroughly on the alert for a more definite cause of neuro-circulatory disturbances in a relatively large number of pilots other than that of excessive flying, overwork, or worry which is usually assigned. As has been stated in the beginning of this paper, it is believed to be the exception rather than the rule to find the average experienced pilot who would react unfavorably to the usual conditions of flying, provided that he had no neuropathic history, avoided prolonged intemperance in his habits, and availed himself of a nominal amount of daily exercise.

HOSPITALS

R. B. Davis, M.D., *Editor*, Greensboro, N. C.

THE VALUE OF A GOOD BUSINESS MANAGER

For a long time the duties of the hospital administrator were assigned to the superintendent of the hospital who also had to discipline and teach the nurses as well as see that the patients were properly taken care of. That day has passed, not because superintendents of nurses have become less efficient, but because the lay public has become less honest. It is necessary today to have someone spend his entire time and ability in looking after

the economic side of any institution.

The business manager is an asset to any institution for more than one reason. The business manager will make the financial arrangements, where possible, at the time of admission. It is remarkable how a person can raise the money the first day he is in the hospital when it would be so hard for him to raise it the last day he was in the hospital. Then there are those professional dead-beats, who, more often than otherwise, can get by with a pretty line of talk to the superintendent of nurses or some clerk in the office. He always wants the best and most expensive room and requires the most of the nursing staff and in the end pays nothing or else gives a bad check. Another type of case that is hard to cope with is the accident case. The patient invariably feels that the other person is at fault and, therefore, should pay his bills and because he thinks that, he will make every excuse to put off paying the bill until the trial. At the trial if the court does not decide in the patient's favor, he feels that he has been grossly mistreated and that the hospital should suffer along with him. A business manager is prepared to be hard-boiled enough to say to the patient in the beginning that the accident and its results are purely matters between him and the other man and that in so far as the hospital is concerned, it has no claim whatever and no right to expect any payment from the other person involved. Another type of case is that of abortion. Some professional abortionist will do a job in the back room of his office or some other obscure place and then the patient will be picked up by a taxi on the next corner or perhaps she can get home before the hemorrhage and pain is severe. Very soon, however, she shows up in the ambulance or a taxi with severe pains, crying, and demanding immediate hospitalization. A business manager is on to the racket and will let her have pains until her husband or the male who is playing that role comes up with the money to take care of the bill.

An efficient business manager is also a great asset in discharging a patient from the hospital "with a good taste in his mouth." If the patient has a complaint while he is in the hospital, the business manager listens attentively to it and attempts to adjust it in a diplomatic way; in a way, perhaps, which the superintendent might not have had the time nor the experience to handle. Another important thing is that the patient leaves the hospital with the bill fully paid. This is the greatest step toward a satisfied patient. Anyone who knows can understand how hard it is to satisfy about a hospital stay and credit the same patient with the bill. If he was treated well in the hospital and the business manager writes him an urging collection letter after he has been discharged for six weeks, the ex-patient becomes an active "knocker." On the other hand, if he has paid the bill, the service is appreciated, the patient's propaganda is favorable to the hospital and he will return if further hospitalization is necessary.

From the doctor's standpoint, the business manager is a great asset. In many instances he collects hundreds of dollars for the physician which he would be unable to collect. Generally speaking, the patient is most appreciative the day he is discharged from the hospital; frequently he has the money and will pay the doctor if he is standing there to take it; but often when he has been at home, a few days, his appreciation wanes and so does the money; then at the end of the month when the doctor's bill arrives, there is some diminution of appreciation and a considerable shrinking of the bank roll. By the time the second month rolls around and the second bill arrives, the patient may have had some slight physical disorder and he immediately sets up, in his mind, opposition to paying a bill when he still has some trouble. The doctor finally gets around to the third bill and most likely, by this time, the patient has started knocking the doctor. A good business manager would have gotten the money for the doctor the day the patient left the hospital and everything would have been entirely different. The best thing any active staff could do would be to employ a business manager, even if the hospital itself did not feel able to pay all of the salary.

The author, therefore, can see no reason why every hospital cannot have a well-paid hospital business manager since he will collect far more, for both the doctors on the staff and the hospital, above the collections as made by the office of the doctor and the superintendent of the nurses, than his salary would be.

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

DEFICIENCY DISEASES

WE REGARD PELLAGRA as a disease due to the want of a mixture of things in the B_2 group. In our estimate pellagra still has its essential glossitis, enteritis, dermatitis and dementia, but also has an associated neuritis due to lack of B_1 (beriberi), sore lips (cheilosis) and ophthalmia due to lack of riboflavin, and often conjunctivitis due to vitamin A deficiency.[1]

Niacine deficiency may cause only glossitis in which is diagnosed only the niacine deficiency; pellagra only when symmetrical dermatitis and glossitis are seen together.

1. M. A. Blankenhorn, Cincinnati, in *Ohio Med. Jl.*, Nov.

Niacine or niacine amide in 50 mg. doses every few hours up to even 10 doses per day may within three days improve the patient so that feeding can be done. High-protein diets are urged, supplemented with dry powdered brewer's yeast 30 gm. t.i.d. When the mouth is sore and vomiting frequent, careful nursing is important. If diarrhea is made worse by feeding, says this sensible doctor, paregoric is indicated in generous doses.

In the past 3½ years five patients have been recognized with signs of riboflavin deficiency *as shown by an eruption at the corner of the mouth.*

There is also believed to be a tongue lesion due to ariboflavinosis—a magenta-red spread over the entire organ, papillae flat and hard to see, tongue less red than in niacine disease and less slick than in pernicious anemia. Ariboflavin—5 milligrams twice daily—causes the lesions to disappear in a week or two, but not as rapidly as do the tongue lesions of niacine disease.

We have made the diagnosis of nutritional neuritis 61 times in the last 3½ years—multiple peripheral neuritis, symmetrical.

All of these patients were treated with generous diet and medicated with yeast and thiamine chloride; where severe and the patient enfeebled, thiamine 50 mg. intravenously daily, for a week or thereabouts.

Scurvy is a rare deficiency disease in Cincinnati or else we fail to find it; two examples and both of these were severe; large subcutaneous hemorrhages, painful joints, multiple petechiae, especially in the hair follicles of the legs, and bad bleeding gums. Both had fairly good levels of vitamin C in the blood but both got well promptly on proper diet and vitamin C.

Vitamin A deficiency was found only twice in the past 3½ years and then it was recognized as a follicular keratosis, a well-known skin eruption. Both of these patients were sent to hospital for chronic diarrhea. They had no other manifest deficiency. We have found that treatment of chronic diarrhea with large doses of carotene or vitamin A has been helpful.

Cirrhosis of the liver was seen 104 times in 3½ years, not counting cardiac nor syphilitic cirrhosis nor that which follows acute arsenical hepatitis.

With a generous diet and vitamin including yeast we have improved our patients who seemed to be about to become comatose and discharged as well many who looked hopeless.

We do not understand the nature of hepatic coma, although we see it often. In our experience once the patient goes into coma all efforts fail.

THE TUBERCULIN TEST IN PRIVATE PRACTICE

ANY PHYSICIAN can learn to make these tests The intracutaneous test is preferable.

With reliable samples of old tuberculin, or purified protein derivative, 90 to 95 per cent of cases of tuberculosis will be detected. If old tuberculin (OT) is used, .004 mg. is the initial dose; if purified protein derivative (PPD) is used, .00002 mg. is the initial dose. Forty-eight hours later the reaction is read, and if negative, a second and increased dose of 0.1 mg. (OT) or 0.0005 mg. (PPD), is given a week after the initial dose, preferable in the other arm. If after 48 hours, this second dose produces a negative reaction, we have fairly good evidence that we are not dealing with tuberculosis. Purified protein derivative (PPD) is considered a little more accurate than old tuberculin (OT).[1]

Interpretation is best made by palpation. In the absence of induration or edema, no reaction should be recorded. In many instances 1 plus or 2 plus reactions have been recorded, based on areas of pinkness or redness, which are not indicative of sensitivity to tuberculoprotein.

In cases of fever of undetermined origin a tuberculin test is of great diagnostic value.

If a child shows a positive reaction, then it is our duty to trace the source of infection. It is found frequently in the home.

Physicians should make more frequent use of the tuberculin test. Active tuberculosis is ten times more common at high school and college age than at grade school age. It would be wise to do a routine tuberculin test on patients in this younger age group. All applicants for marriage license should have the tuberculin test in addition to the Wassermann. Food handlers and domestics, especially in the younger age groups, should have the tuberculin test.

1. G. R. Maxwell, Morgantown, W. Va., in *W. Va. Med. Jl.*, Nov.

DENTISTRY

J. H. GUION, D.D.S., *Editor*, Charlotte, N. C.

CONTROL OF DENTAL CARIES

EXTENSIVE RESEARCH in various institutions has produced a widespread acceptance of the theory that a close correlation exists between the number of lactobacilli in the saliva and the degree of dental caries activity in the mouth.[1] Further, that these organisms can be reduced and dental caries arrested by restriction of carbohydrates in the diet. A diet must be provided that will insure growth and development and the maintenance of good health.

1. J. R. Thompson, Dir. Div. Dental Hygiene Neb. State Dept. of Health, in *Neb. Med. Jl.*, Nov.

It is necessary to estimate the number of lactobacilli present in the month. The patient is supplied with containers and instructions for collection of at least two specimens of saliva, taken on consecutive days. This is obtained by chewing paraffin and expectorating the saliva thus stimulated into a sterile bottle.

Specimens are mailed directly to the laboratory. Here 1 c.c. of saliva is diluted with 4 c.c. of 1 per cent glucose infusion broth; 0.1 c.c. of that mixture is placed on acid tomato agar pH_5 incubated four days and lactobacillus counted. When the lactobacillus counts are constantly negative, dental caries is not active; when sporadic (from negative to low), dental caries is not active; when low and constant, moderately active caries results; when constantly high, very active caries is or will be present.

In the majority of cases, the elimination of lactobacillus can be accomplished by the moderate reduction of carbohydrates—through the omission of ice cream, candy, chewing gum, soft drinks, and all artificially sweetened foods. At the close of a two-weeks period on a diet thus restricted, the lactobacillus count of the saliva is lowered noticeably.

In a few cases of extremely high lactobacillus counts, that do not respond to the restricted diet, it is necessary to reduce the starch intake as well. Such cases require the careful direction of physicians.

It is possible to plan an adequate diet that is low in sugar and starch and will, when adapted to the nutritional needs of the patient, reduce the lactobacillus count to negative or very low. Thus, rampant caries can be checked or so reduced that the dentist can control dental decay by simple operative methods.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor,* Fallston, N. C.

NUTRITION PROBLEMS OF IMPORTANCE TO THE PRACTICING DOCTOR

Measurements of vitamin excretion, blood level and saturation are as yet difficult or unreliable. The general practitioner must know the normal nutritive requirements and see that they are fulfilled for his patients. The daily ration should include 70 grams of protein; calcium 1 gm.; iron, 15 mgm.; vit. A, 5000 units; thiamine, 1.5 mgm.; riboflavin, 2 mgm.; nicotinic acid amide, 15 mgm.; and vitamin C, 75 mgm. For protein eggs, milk, meat, liver and kidney are necessary, and milk is the most important source of calcium. Many people cannot afford to buy enough meat, or they have an idiosyncrasy to milk.

Those without disease can learn the normal diet and receive advice about economical marketing.

In regions where serious deficiency disease is rare the diagnosis is usually missed. Scurvy in adults is likely to be considered some obscure hemorrhagic disease or anemia; beri-beri heart is recognized only when one is awake to the possibility, and riboflavin deficiency can easily be passed over as eczema or conjunctivitis of unknown cause. In severe cases, aside from general measures, the patient should receive (a) a liberal high-vitamin diet, (b) a vitamin barrage, including especially any substance which might be lacking (such as a preparation rich in all the components of vitamin B in beri-beri), and (c) large parenteral doses of any vitamin which is specially needed (such as niacin and possibly other B components in pellagra).

He must be familiar with the circumstances which predispose to vitamin deficiency and must guard his patient against them. He must know, for example, that persistent diarrhea may be associated with failure to absorb vitamins properly, that patients with gastric ulcer kept on a milk diet for a long time may develop deficiency disease, that more thiamine is needed in persons doing violent exercise and in hyperthyroidism; and that if large amounts of glucose are given intravenously, thiamine stores may be rapidly depleted.

There are great variations in resistance among individuals to lack of a specific vitamin. Bloomfield does not accept a report of a chemical examination of thiamine excretion or blood ascorbic as a complete guide to the needs of the patient. Minor-vitamin-deficiency states, he regards as the most treacherous domain of vitamin study. It was found that thiamin lack was followed by anorexia, insomnia, weakness, dizziness, nausea, etc.; riboflavin lack caused acute conjunctivitis; and niacin deficiency often led to diarrhea. But this does not mean that every one with red eyes lacks riboflavin, or that every one who sleeps badly has a vitamin-B deficiency. Nor does slight fatigue or irritability indicate any vitamin deficiency at all.

If there is a definite history of an adequate diet, vitamin deficiency is practically ruled out as a cause of the symptoms. If deficiency disease seems a possibility because of a poor diet, an adequate diet will usually correct the symptoms and special vitamin preparations are as a rule neither necessary nor desirable.

Can supernormal health, he asks, be induced by excess intake of vitamins, Can people on an ordinary adequate diet be made to feel even better and stronger? The answer is probably "No."

1. A. L. Bloomfield, Prof. of Med., Stanford University in *The Diplomate*, Nov.

Performance was in no respect better with the added vitamins. There is found some evidence that *forced growth of young animals by excessive diet actually shortens life;* young animals which are kept small for a time by limited diet lived much longer.

What about synthetic *versus* natural vitamin sources? Mice placed on a diet from which vitamin B was lacking failed to grow properly. Addition of a fresh liver concentrate promoted adequate gain in weight, but addition of synthetic thiamine, riboflavin, pyridoxin, niacin, calcium pantothenate, choline and *p*-aminobenzoic acid were less satisfactory—a demonstration of superiority of vitamins from natural sources. All the beneficial effects of orange juice may not be duplicated by synthetic ascorbic acid. The doctor must depend as much as possible on citrus fruit, yeast, cod-liver oil, wheat germ, liver, and similar sources for vitamins before prescribing synthetic preparations. The latter should usually be reserved for situations in which there is urgent need for large doses of specific vitamin—often parenterally—such as thiamine in acute "alcoholic" neuritis, vitamin K in serious prothrombin deficiency, and so on.

Vitamin lack is carefully to be guarded against in infectious disease and in patients prepared for surgical operation. It has recently been shown that poor nutrition *increases* resistance to skin infection with vaccinia virus in rabbits.

The practitioner must provide an adequate diet for his patients and if possible for their families; safeguard his patients against circumstances which promote vitamin deficiency; recognize frank vitamin deficiency and treat it energetically; and keep in mind the possibility of "minor" deficiency diseases, but as a rule treat them by normal diet rather than by synthetic preparations.

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

EDITOR BLANTON RETIRES

IT would seem to be necessary for the individual who is to write history first to feel the impingements of the roll of the years. Youth is occupied by interest in the present; maturity by life's cyclorama; those who are advanced in the ageing process are inclined to retrospection. Most philosophic history is the product of minds that are looking upon the western sky; reflecting upon what has taken place since sunrise and before dawn, and wondering, too, what lies beyond the sunset's glow. Those in youth and maturity make history; the ageing presume to record and to interpret it.

Dr. Wyndham Bolling Blanton is an unusual historian because he is an unusual man. He is all the more unusual because he seems not to be. His daily life is apparently that of the physician kept busy by the exactions and the pleasures of a large and varied practice, largely amongst the best people of his splendid city. Yet he withholds his services from no one from whom the call comes. One feels that his professional work is done without waste of physical and of mental energy, without handicapping apprehension and without indulgence in futile self-reproaches. And one surmises that his medical practice is done with such a degree of competency and comprehensiveness as to leave him in little doubt of diagnostic results and with such carefulness as to afford him the daily tutelage of his own instruction—the fundamental basis of all sound pedagogy. One would expect the therapeutic effort of such a diagnostician to make available for the patient the final offerings of modern medicine.

I have long thought of Dr. Blanton as looking upon disease in man as the manifestation of a conflict between the individual and the environment. Such a philosophic view of disease would exclude the fortuitous and would evoke in the practitioner respect for the law of cause and effect. And such an attitude in the physician would tend to increase his interest in history and to deepen his respect for what has been.

Dr. Blanton was doubtless a historian before he knew it. But he must have been consciously historic-minded at an early age. Although he is still a young man, he is one of the few medical historians of our country. Several years ago, when the Medical Society of Virginia decided to have the history of medicine in this Commonwealth written, the assignment of that responsibility went to Dr. Blanton. Within a short time he had placed in our hands the first volume of that history—Medicine in Virginia—from 1607 to 1700. Soon the second volume, covering the next century, followed. The final of the three volumes, devoted to the nineteenth century, eventually came from the press. In those three books the world is given, not only a magnificent account of the development of the healing art in the Colony and in the Commonwealth of Virginia, but an informative and interesting account of contemporary civilization. The history of medicine in no other state can be so interesting as that of medicine in Virginia because the history of no other state is so interesting and has been so influential as that of Virginia.

I am not certain that Dr. Blanton had concluded his Medicine in Virginia when he was requested by the Medical Society of Virginia to assume the editorship of the *Virginia Medical Monthly*—the Society's official organ. Quietly, efficiently, apparently easily, and altogether without fanfare he has done editorial work the equal in quality of that of the History of Medicine. For ten years he has

edited the *Medical Monthly*, and his work has been of such a kind as to place the Monthly amongst the best of the state journals. Now he retires from the editorship of the *Virginia Medical Monthly*.

Were Dr. Blanton not to write more, he could look back upon his contributions to medical literature with comforting satisfaction. I know of no other physician in these parts who has made more fruitful and generous gifts with his pen. And he does not live and write in the academician's detachment from the struggles of the day. He is a busy practitioner. He teaches medicine. He often makes contributions to medical journals and to current history. He thinks nothing of fetching forth a text-book. Only a few years ago he gave us the essentials of physical diagnosis in a small volume so compact that not a spareable word was used. Recently he has issued a small book on allergy. Because he thinks clearly he writes lucidly and concisely.

Now he becomes emeritus editor of the *Virginia Medical Monthly* and he remains a member of the Editorial Board. The physicians of the state are fortunate who have in their number one who is so competent and one who does his work for them so willingly and so cheerfully and apparently so easily. And he and we are fortunate, too, in being able to call to his successorship another who has never been able to distinguish his own interest from the common interest—Dr. Marvin Pierce Rucker. I should dislike decidedly to be embarrassed by being made the successor to either of them.

CASE REPORT

PROLONGED UNEXPLAINED FEVER

A 60-YEAR-OLD MATRON was admitted to the hospital on June 27th, 1942, ten days after she had been bitten on the right ankle by some insect, perhaps a mosquito. There was a small symptomless lump on the ankle, five days later chills and fever —often 104.6°—headache and malaise but no urinary, intestinal or other localizing symptoms. Complaint of gas in the colon when the fever was high.

On admission the urine showed a few pus cells, w.b.c. 12,500—75 per cent polys. Numerous attempts to find plasmodia were unsuccessful and so agglutination tests were made. The widal, weil-felix and undulant fever reports were negative. Wassermann negative. Repeated urinalyses negative except occasional pus cells; several days later 1 plus pus. The patient was certain she had malaria and after eight days in hospital some quinine was given when her t. was 104°. It promptly dropped to normal and remained so for a week. She asked permission to go on a trip to Virginia and this was granted. A month later her family phoned to say that she had just finished another course of quinine (120 grs. without my knowledge) and that the fever was as bad as ever. Some of her serum was then sent to Washington asking that complement fixation and agglutination tests be done for all possible fevers—especially the complement fixation for fever. The reports on Q fever, undulant fever, widal, weil-felix, etc. were all negative. Smears were sent to the U. S. Public Health Service for study for malaria but none was found.

Her urine at this time showed 1 plus pus and 1 plus albumin so she was readmitted to the hospital on September 28th. X-ray of her kidneys showed a small stone in the left pelvis. Cystoscopic examination showed no impairment of function and only on occasional pus cells. Blood culture was negative. Proctoscopic examination revealed no abnormality. X-ray of the chest was negative. Tuberculin negative. X-ray of the intestinal tract showed no abnormality except some loss of haustration in the colon. She was discharged from the hospital on October 3rd with normal temperature, but it still rises every day or two to 99.2°. If anyone reading this article has an idea which might be investigated the writer would appreciate it.[1]

1. J. T. Quatterbaum, in *The Recorder* (Columbia, S. C.), Nov.

SULFAGUANIDINE AS A CHEMOTHERAPEUTIC AGENT IN INTESTINAL INFECTIONS

(E. K. Marshall, Jr., Baltimore, in *Miss. Doc.*, June 20th)

A number of controlled studies on the use of sulfaguanidine in bacillary dysentery have appeared during the past year. Cases of dysentery due to Flexner, Shiga, Schmitz and Sonne type have responded favorably, the clinical course being considerably shortened. Data obtained on Shiga cases:

1. Feeling of well-being within 24-48 hours, rapid relief of abdominal pain and tenesmus.
2. Temperature and pulse in uncomplicated cases often normal within 1-3 days.
3. A remarkable reduction in the number of stools.
4. Rapid disappearance of blood from the feces; mucus also decreases, but takes longer to disappear.

Of 281 children receiving sulfathiazole, 9 per cent developed toxic reactions beyond nausea and vomiting. Sulfaguanidine toxic reactions are nil or negligible. Only cases which do not respond to this drug require a much more toxic and a more efficient chemotherapeutic agent.

Schedule: Initial dose, 0.05 Gm. per Kg.; maintenance dose of 0.05 Gm. per Kg. every 4 hours until number of stools is reduced to 5 or less, then 0.05 Gm. per Kg. every 8 hours, for at least 3 days. In adults, weight can be disregarded and a dose of 3.5-4.0 Gm. given.

THE THREE DRUGS found useful in *colic in infants*—(1) Atropine 1/1500 gr. before each feeding (pyorospasm, tight anal sphincter); (2) phenobarbital 1/16 to ⅛ gr. (may excite rather than quiet); (3) paregoric (seldom) 5 to 10 drops in a teaspoonful warm water.—*Moore*, of Omaha.

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As is true of most Medical Journals, all costs of cuts, etc., for illustrating an article must be borne by the author.

TRI-STATE OFFICERS VOTE NO MEETING IN 1943

As NOTICE after notice came in that many other medical organizations were following the lead of the American Medical Association in omitting to hold a meeting in 1943, the officers of the Tri-State Medical Association of the Carolinas and Virginia were written and asked to vote as to whether or not this Association would hold a meeting.

Only two officers voted for a regular meeting. Two others voted for a sort of skeleton meeting. So it is seen that the overwhelming sentiment is that no meeting be held next year. This is a decision that all were reluctant to make. However, it is confidently believed that the membership will agree with its officers in making this important decision.

This does not mean that there will be any lack of interest in the affairs of this Association. Those who were to have appeared on its program will be asked to contribute their addresses and essays for publication in the Association's official journal. In this way the meat of the meeting will be set before the membership; and, much as we prize the annual renewal of faith and fellowship and the stimulation of contact with inspiring personalities, the meat is the main thing.

Every officer and every other member—and especially the ex-presidents and honorary fellows—is reminded of the good he can do in enlisting the interest of those not members who should be members. Application blanks will go out in due course.

The secretary-editor extends to every reader the best of holiday good wishes.

PLENTY OF HOSPITAL BEDS TO MEET NEEDS—TOO MUCH GENERAL PRACTICE BY SPECIALISTS ALREADY

So NOW we are faced with a rationing of hospital beds. It was to be expected, even had there been no war. For fifteen or twenty years we have been told, in season and out of season, that we just must have so many hospital beds per thousand of population; that the place for every sick man, woman or child is a hospital—even that the place for well folks to get what is absurdly called a "health check-up" is a hospital; and, inevitably, the people have come to demand a hospital bed in case of any but the most trivial injury or disease. Hospital insurance schemes may do more good than harm but it is doubtful. They account for much uncalled-for hospitalization.

Everybody knows that hospitals are necessities in the treatment of some cases of illness and in-

jury. Pretty nearly everybody in medicine who keeps his eyes open knows that at least half of those treated in hospitals—excepting hospitals for patients mentally diseased—could be just as well, and much more cheaply cared for in their homes. And a large percentage of them would recover much more rapidly in their own beds.

There's a great how-to-do over the land about overcrowding of hospitals. No doubt they are overcrowded in many places, and in some places construction of new hospitals has been stopped because essential materials could not be obtained. In the wailing and protesting to High Heaven against this lack of concern for the health of the people this journal declines to join. This journal recommends that every hospital experiencing a demand for beds beyond its ability to supply call in a committee of good, country family doctors to take a hospital census (not "make a survey") and list the fifty per cent of patients occupying beds who would be just as well, or better, off at home; and then make the result known in the papers, with the added statement that hospitals are places for sick and injured folks who need care that they cannot get readily at home, and for which hospital equipment is essential.

When Charlotte's hospital campaign was at its hottest, one of the leaders announced on a certain day in the afternoon paper "no matter how great your need of a hospital bed tonight you cannot get one in Charlotte, for every bed is filled." By a curious and ironic coincidence, that same paper carried a picture of a boy sitting up and smiling happily in a hospital bed in Charlotte, because he "thought" he had been bitten by a snake while playing in a dark basement. Does anybody know of anything useful in a case of *known* snakebite that cannot be done just as well in home as in hospital? And even if the patient be taken to hospital for treatment, why not send him on home afterward?

Within the past month a dozen cases have come under our own observation in which patients hardly ill at all anxiously inquired, Doctor, don't you think I'll have to go to the hospital. None of them did, and all of them are well.

Many medical men, including Government officials and editors of medical journals, are proclaiming that most of the specialists in medicine and surgery will have to do much general practice until the emergency is over. That will require little change from the ordinary state of things. At least half of the work done by specialists in North Carolina would, under any intelligent classification, be assigned to general practice. This journal has not the least doubt that far the greatest quantity of the worthless "cold serums" are given and touted by specialists. General practitioners recognize their worthlessness and don't give them.

It would be of much greater health service if Government officials, editors of medical journals and all others in positions to be heard on how best to provide all the people with good health care tell the people plainly that their own family doctors are entirely competent to do for them the most of the things for which they have been going to specialists; and that the family doctors will tell them when the services of specialists are needed, and send them to those of ability and integrity.

It is much more necessary that general practitioners take over a great portion of the practice being done by specialists than that specialists "forget they are specialists for the duration."

We have plenty of hospital beds for all those who need, or are likely to need, hospital beds.

SUICIDE RARER IN WARTIME

The Metropolitan Life Insurance Company's reliable figures show a significant reduction in the number of suicides since the outbreak of the present war. This is attributed to the tendency to forget imaginary and trivial troubles in times of real and great calamity.

No doubt the figures are reliable and the reasons ascribed to a large extent valid. However, we would suggest another factor as operative in reducing the number of suicides in time of war. The newspapers have other use for their front-page headlines than to proclaim that so-and-so has foredone his own life, and so fewer persons in real or fancied trouble are impelled to killing themselves by learning that somebody else has adopted that means of escape.

This journal has never published a statement that a person has killed himself. It earnestly urges all medical journals and newspapers to adopt the same rule.

In times of war suicide becomes rarer than in peace times.

The death rate from suicide among the company's policyholders this year is with one exception the lowest on record. For 1941 the rate dropped sharply from the preceding year. This phenomenon of an exceptionally low suicide rate is attributable largely to the psychological effect of the war, although the increased standards of incomes have contributed a share. A similar low level of suicide mortality is observed in England, where the rate fell consecutively from year to year between 1939 and 1941, and where the 1941 suicide rate among males was 15 per cent below that of 1939. Also, there was a sharp fall in the number of suicides in the last three months of 1939, which in England marked the opening period of the war. The most recent German figures likewise show a fall of 30 per cent from 1939 to 1941 in the suicide rate.

This decline in suicide during wartime has been observed in practically every country at war, and neutral nations neighboring on the belligerent countries shared in this phenomenon.

Metropolitan's experience in the last war was a decline of 20 per cent between 1917 and 1918. The downward

trend began in 1916 and continued through 1920. Between 1915 and 1920 the decline was more than 50 per cent. While there was some rebound from these low levels after the war, the suicide rate has never returned to its pre-World War level, not even during the economic depression in the 1930's.

The interest is in the evidence of one favorable psychological effect of war. A national calamity acts as a uniting force. The needs of the country become of first importance, and the petty interests and difficulties of the individual tend to be forgotten in the urge to do one's part in a time of crisis. Many individuals whose lives seem to lack purpose become absorbed in rallying to the defense of their country. Men live for the present and worry less about the future, especially as, during war, new channels of activity are opened. The demands of the military forces for material cause a sudden spurt in production and money incomes. Thus economic and psychological forces work together for the good of our state of mind.

NEW TREATMENT FOR BURNS SAVED 30 OUT OF 32 PATIENTS

Treatment employing 2.5 per cent sulfadiazine, a member of the sulfanilamide family of drugs, in 8 per cent triethanolamine, an emulsifying agent and solvent useful for applying certain medicaments to the skin, was used in second- and third-degree burns by Milton Rothman, M.D., et al., New York (*Journal of the A. M. A.*, Nov. 14th). The area burned varied from 12 to 45% of the body surface. This recovery rate is very high in view of the severity and extensiveness of the burns. The treatment is a modification of one reported last year by Pickrell of Hopkins.

The solution was applied by spraying on the surface of the burn every hour on the first day, every two hours on the second day, every three hours on the third day and every four hours on the fourth day. The wound was dried by fanning or with warm air after each application. A translucent scab formed in 24 to 36 hours and alleviated pain and the need of frequent dressings. There were no reactions from the sulfaziazine and the solution may be employed without irritation or constriction about the face, mouth, eyes, joint sand fingers.

SULFADIAZINE: THE TREND IN SULFONAMIDE THERAPY

(W. W. Spink, Minneapolis, in *Trends in Medical Practice and Research*)

Sulfadiazine is the drug of choice in the treatment of: Infections due to beta hemolytic streptococci (Lancefield Group A, also B, C, G): meningococcic bacteremia and meningitis; pneumococcic pneumonia, bacteremia and meningitis; urinary tract infections due to beta hemolytic streptococci and probably other bacterial species; Friedlander bacillus infections. The advantages of sulfadiazine are these: It is less toxic; it can be given more easily by mouth in smaller doses and at less frequent intervals; it is excreted more slowly; effective blood level concentrations can be more readily maintained; it is more readily absorbed from the intestinal tract; it is less likely to be acety and thus rendered inactive in the body; Acetylsulfadiazine is more soluble in urine.

To maintain a sulfadiazine blood level between 10 and 15 mg.%, we prescribe an initial dose of 4 Gm. and then 1 Gm. every 4 hours. For a blood level of 5 to 10 mg.%, 1 Gm. every 6 hours suffices. For infants under 6 months of age, give 0.5 Gm. and then 0.25 Gm. every 6 hours; between ½ and 3 years of age, use 1 Gm. followed by 0.5 Gm.; between 3 and 10 years, give 2 Gm. and then 1 Gm. every 6 hours. A 5% solution of sodium sulfadiazine may be given intravenously.

NEWS

SEABOARD MEDICAL ASSOCIATION

The Annual Meeting of the Seaboard Medical Association was held at Wilson, N. C., December 1st-3rd. The opening session, open to the public, was presided over by Dr. B. T. Clark, president of the Wilson County Medical Society. Dr. G. E. Bell of Wilson, president of the Seaboard Asociation, addressed the meeting on "The Doctor and the War." There was also an address by Governor J. M. Broughton. Dr. S. A. Thompson of New York City addressed the doctors on Wednesday afternoon on "The Surgical Treatment of Coronary Artery Disease." Other physicians who read papers at this meeting were: Dr. C. P. Jones, Jr., Newport News; Dr. A. A. Burke, Norfolk; Dr. Hugh A. Thompson, Raleigh; Dr. Henderson Erwin, Eureka; Dr. C. L. Harrell, Norfolk; Dr. R. J. Reeves, Durham; Dr. R. M. Wright, Phoebus, Va.; Dr. Ivan Procter, Raleigh; Dr. Bayard Carter, Durham; Dr. Russell Buxton, Newport News; Dr. F. N. Mullen, Jr., Norfolk; Drs. J. T. Kerr, C. W. Goodwin and H. F. Easom, all of Wilson; Dr. Wm. B. Porter, Richmond; and Drs. G. T. Harrell, Jr., Arthur Grollman, J. R. Williams, Jr., and T. R. Harrison, all of Winston-Salem.

Officers for the coming year are: Dr. C. L. Harrell, Norfolk, Dr. M. A. Pittman, Wilson, Dr. H. G. Ashburn, Norfolk, Dr. Leslie Lee, Kinston, and Dr. O. R. Yates, Suffolk, vice-presidents; Dr. C. P. Jones, Newport News, secretary-treasurer.

A number of social affairs added much to the pleasure of the meeting.

MECKLENBURG COUNTY (N. C.) MEDICAL SOCIETY

At its meeting on December 2nd, the MECKLENBURG COUNTY (N. C.) MEDICAL SOCIETY elected the following officers for the coming year: Dr. T. C. Bost, president; Dr. Luther Kelly and Dr. Ernest Franklin, vice-presidents; Dr. M. T. Gilmour, secretary-treasurer.

The Board of Regents of the AMERICAN COLLEGE OF PHYSICIANS has announced the cancellation of their 1943 Annual Session, which was scheduled to be held in Philadelphia, April 13th-16th, 1943. This action was taken after thoughtful consideration of all factors involved, including an intimation from the Secretary of War and the Office of Transportation that larger national medical groups should not plan meetings at the time set; a growing difficulty in getting speakers and clinicians of top rank to maintain the usual standards of the program; prospect of greatly reduced attendance, because civilian doctors are faced with too great a burden of teaching and practice already; a decreasing active membership, due to approximately 25 per cent of all doctors being called to active military service. President James E. Paullin announced, however, that all other activities of the College would be pursued with even greater zeal, and that the College would especially promote regional meetings over the country and organize post-graduate seminars in the various military hospitals for doctors in the armed forces.

UROLOGY AWARD—The American Urological Association offers an annual award, not to exceed $500, for an essay (or essays) on the result of some specific clinical or laboratory research in Urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals

and to urologists who have been in such specific practice for not more than five years.

The selected essay (or essays) will appear on the program of the forthcoming meeting of the American Urological Association, May 31st-June 3rd, 1943, Hotel Jefferson St. Louis.

Essays must be in the hands of the Secretary, Dr Thomas D. Moore, 899 Madison Avenue, Memphis, on or before March 1st, 1943.

At its annual meeting held in Roanoke recently the VIRGINIA MEDICAL SOCIETY installed as president, Dr. J. M. Emmett, Clifton Forge; elected Dr. C. B. Bowyer, Stonega, president-elect; Dr. W. L. Powell, Roanoke, Dr. W. R. Payne, Newport News, and Dr. P. W. Boyd, Winchester, vice-presidents; Dr. M. Pierce Rucker, Richmond, editor; and Miss Agnes Edwards, secretary-treasurer.

MAJOR HUGH SMITH, M.C., Greenville, is now stationed at 92nd General Hospital, Camp Bowie, Texas, as Chief of the Medical Service.

MAJOR L. P. THACKSTON, M.C., formerly of Orangeburg and Fort Jackson, is now stationed at Camp Bowie, Texas, as Chief of the Surgical Service.

DR. WYNDHAM B. BLANTON, Richmond, has retired as Editor of the *Virginia Medical Monthly* and has been succeeded by DR. M. PIERCE RUCKER, Richmond.

DR. T. V. GOODE was host at a venison dinner on November 17th, honoring Dr. C. H. McDevitt, who was leaving in a few days for Atlanta to join the Charlotte Base Hospital unit.

At the meeting of the Catawba Valley Medical Society held at Lenoir on the evening of November 17th, Dr. Clyde R. Hedrick was elected president, Dr. W. L. Oehibeck of Morganton vice-president and Dr. L. A. Crowell, Jr., re-elected secretary-treasurer.

DR. J. S. GAUL of Charlotte spoke to the Kiwanis Club meeting at Lenoir on the evening of November 20th on the crippled children's clinic. He outlined for them the work done in that section for crippled children in the past eleven years.

DR. POWELL G. DILLARD has been appointed Lynchburg's school doctor to succeed Dr. J. Paulette Clark, deceased. Dr. Clark had been school physician since 1918.

MARRIED

Dr. P. M. Kinney and Miss Adelaide Smith, both of Bennettsville, S. C., were married on August 15th at Battle Creek, Michigan. Dr. Kinney is with the medical corps at Camp Breckinridge now, with the rank of captain. At the time of his marriage he was stationed at Fort Custer.

Dr. James Bannister Stone Perrow and Miss Margaret Louise Turner, both of Lynchburg, Va., were married on November 28th.

DIED

Dr. John Edward Knight Flannagan, 43, specialist in tuberculosis and a member of a widely-known Virginia family, died of a heart attack Dec. 1st at Wytheville, Va.

Dr. Flannagan was born in Charlottesville, Va., March 11th, 1899, and was a son of Mrs. Lucy Catesby Jones Flannagan and the late Dr. Roy Knight Flannagan, of Richmond. His father, whose death occurred June 18th, 1942, was for more than 30 years an outstanding figure in public health work in Virginia, and was medical adviser to the State Department of Public Welfare.

Dr. Flannagan attended the Charlottesville schools and John Marshall High School, Richmond.

After taking a premedical course at the University of Cincinnati he entered the medical school of the University of Virginia, where he graduated with the degree of M.D.

He studied at the Trudeau Sanatorium, Saranac Lake, N. Y., becoming a specialist in tuberculosis and x-ray work.

Later he practiced his profession at the Virginia State Sanitarium, at Catawba, and was for a time resident physician at the Mount Regis Sanitarium at Salem.

For the past several years he had been medical adviser on the staff of the Lee Memorial Hospital and of the Southwestern State Hospital at Marion.

Dr. Seavy Highsmith, 68, dean of Cumberland County physicians and leader in the civic and religious life of Fayetteville for more than 40 years, died Dec. 8th in the Highsmith Hospital after two weeks' illness. He was entering his 42nd year of practice in Cumberland County and had earned a wide reputation as a general practitioner of a high order.

Funeral services were held at the First Baptist Church of Fayetteville of which Dr. Highsmith was a deacon.

Dr. Highsmith was a son of the late Robert and Elizabeth Carroll Highsmith of Sampson County. After completing his education and medical studies at Wake Forest College and the Medical College of Virginia, he located at Fayetteville. At one time he was associated with his cousin, the late Dr. J. Frank Highsmith, in the Highsmith Hospital and was later part owner of the Cumberland General Hospital, but it was as a family physician that he was best known.

Dr. Highsmith was a past president of the Cumberland County Medical Society and of the Fifth District Medical Society and a past vice-president of the Tri-State Medical Society.

Dr. Highsmith is survived by his wife, a daughter and a son, Lieut. Seavy Highsmith, Jr., of Camp Blanding, Fla.; two brothers, Dr. Frank Highsmith and Dr. John Highsmith, and three sisters.

Dr. Cicero McAfee McCracken, 74, well-known Fairview physician, died in an Asheville hospital Dec. 8th, after a long period of declining health.

Dr. McCracken was a native of Haywood County and came to Fairview after completing his education. He practiced medicine there for 45 years.

He served on the Buncombe County Board of Health for several years and was a member of the Fairview School Board. He took a prominent part in the activities of the Masonic lodge. Survivors include the widow and ten children.

Dr. George T. Tyler, 66, Greenville, S. C., surgeon and physician, died Nov. 26th in a Baltimore hospital following two weeks' illness of a rare form of meningitis. Interment was in Mount Hebron Cemetery, Winchester Va.

Dr. Tyler, native of Frederick, Md., was a son of the late Rev. Dr. George T. and Mary Fackler Tyler. He was educated at Randolph-Macon College, Ashland, and received his medical degree at Johns Hopkins University.

Dr. Tyler was for some years in the Medical Corps of the United States Army before and during the first World War, and had since established a hospital in Greenville. He was a member of the Tri-State Medical Association and took an active part in its meeting this year at Greenville.

He is survived by his wife; a daughter, Miss Mary Wathen Tyler; a son, George Thomas Tyler.

Dr. William Elliott Dold, 86, well-known psychiatrist died at his home at Charlottesville, Va., on November 9th. He was born in Harrisonburg and was a son of Dr. Samuel Miller Dold, a surgeon in the Confederate Army. He was educated at Washington and Lee, the University of Virginia and New York University. He took postgraduate work in Germany and Austria. For a number of years he practiced in New York State, coming to make his home in Charlottesville on his retirement from practice in 1935.

Dr. Wade Hampton Atkinson, a native of Johnston County, who practiced medicine in Washington for 50 years, died at his home at Atkinson's Mill on November 14th. Since his retirement from active practice Dr. Atkinson had taken an active interest in farming and live-

Dr. John Spicer, 74, of Goldsboro, N. C., died November 15th while on a visit to his brother, Dr. Richard W. Spicer, of Winston-Salem, N. C. Dr. Spicer had been ill for a number of years.

Dr. Horton Casparis, president of the Tennessee Tuberculosis Association and professor of pediatrics at Vanderbilt University, died in Richmond on November 11th. Dr. Casparis was in Richmond to attend the meeting of the Southern Medical Association. His death was attributed to a heart attack.

Dr. A. H. Redding, 86, prominent Randolph County physician, died at his home at Cedar Falls, Nov. 16th.

Dr. A. D. Tyree, 52, died at Clifton Forge, Va., on November 12th. Dr. Tyree was a native of Amherst County. He was graduated from the Medical College of Virginia and practiced at Virginia Beach, Pedlars' Mill, Iron Gate and Fireco, W. Va. He served in France during World War I, with the rank of captain. He had practiced at Clifton Forge for the past nineteen years.

Dr. Luther Crouse Peter, 73, internationally known eye surgeon, died at Philadelphia November 14th. He was a former secretary of the International Congress and a past president of the American Academy of Ophthalmology and the National Board of Ophthalmology and Oto-laryngology.

Dr. P. P. Clark, 72, of Lynchburg, Va., died on November 9th. He was educated at Hampden-Sydney and at the University of Virginia Medical School. He had practiced in Lynchburg since 1903 and was for many years public school physician.

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SHAFT OF LIGHT—Prostigmin 'Roche' is undoubtedly one of the most outstanding achievements of the past decade. In clinical research Prostigmin is proving a shaft of light, helping the profession to combat successfully a number of disorders, the treatment of which has hitherto been a groping in the dark. Surgeons everywhere use it as a routine measure in preventing abdominal distention and urinary retention—and to the myasthenia gravis patient Prostigmin 'Roche' has indeed come as a shaft of light in his dark world of suffering and disability. HOFFMANN-LA ROCHE, INC., NUTLEY, N. J. — *Makers of Medicines of Rare Quality*

PROSTIGMIN 'ROCHE'

OUR MEDICAL SCHOOLS

Medical College of Virginia

FOUNDERS' DAY

Founders' Day Exercises of the One Hundred Fifth Session of the Medical College of Virginia were held at the Monumental Church, 1224 East Broad street, Richmond, on December 2nd, at noon.

Dr. Haven Emerson, Professor of Public Health Practice, College of Physicians and Surgeons, Columbia University, was the speaker. Dr. Emerson also lectured at 8:00 p. m., Simon Baruch Auditorium.

Dr. Harvey B. Haag, professor of pharmacology, spoke before the staff of the George Washington University medical school on Facts about Tobacco Smoke of Interest to Physicians, October 29th.

Dr. Porter P. Vinson, professor of bronchoscopy, esophagoscopy and gastroscopy, addressed the International Medical Assembly of the Inter-State Postgraduate Medical Association of North America at Chicago, Illinois, on October 30th, on The Diagnosis and Treatment of Pulmonary Abscess.

Dr. I. A. Bigger, professor of surgery, recently gave two lectures before the Oklahoma City Clinical Society on Penetrating Wounds of the Thorax and Wounds of the Major Peripheral Vessels.

Dr. William B. Porter, professor of medicine, on November 4th participated in a refresher course in medicine at the Medical College of South Carolina, giving a paper on Cardio-Diaphragmatic Syndrome, taking part in a discussion of the various aspects of cardio-vascular disease and in a clinical-pthological conference.

The college has received a grant of $84,000 from the Office of Scientific Production and Research of the United States government for the continuation of research on shock, which is being done by Dr. E. I. Evans, assistant professor of surgery.

The veterans of Base Hospital 45, World War I, had as guests the present college unit, General Hospital 45, in Armistice Day exercises on November 11th at Monumental Church at 12 o'clock noon. Dr. W. Lowndes Peple, representing Dr. Stuart McGuire, honorary commander of Base Hospital 45 Association, spoke briefly. The principal address was given by Colonel Fred Rankin, Medical Corps, United States Army. Following the exercises a luncheon was given by the college.

During the sessions of the Southern Medical Association in Richmond, November 10th-12th, many of the faculty of the college participated in programs, exhibits and discussions. Many physicians attending the meeting were college visitors while in Richmond. Dr. J. C. Forbes, associate professor of biochemistry, and Dr. E. I. Evans, assistant professor of surgery, received honorable mention for their exhibits on Protective Action of Sulfanilamide against certain Liver Poisons, and Mrs. Louise Jones, instructor in anatomy, received a scientific award for her exhibit of gross anatomy of presacral and facial nerves.

University of Virginia

Two gifts by anonymous donors have recently been made to the William James Rucker Convalescent Home for Children, one of $750 and another of $200.

Dr. H. E. Jordan and Dr. E. P. Lehman attended the annual meeting of the Association of American Medical Colleges in Louisville on October 26th to 28th. Dr. Lehman made a report as chairman of the Association's Committee on The Teaching of Military Medicine.

Dr. C. C. Speidel, Professor of Anatomy, was awarded an honorary degree of Doctor of Science by his alma mater, Lafayette College, at the Founders' Day exercises on October 23rd.

On Monday, October 19th, Dr. C. P. Rhoads of Memorial Hospital in New York, gave the third annual lecture of the Alpha Eta Chapter of Phi Beta Pi. He spoke on Diet and Experimental Cancer Production.

On Monday, October 26th, a motion picture of The Biological and Clinical Activity of the Adrenal Cortex was presented by the Upjohn Company in the Amphitheater.

Medical College of the State of South Carolina

Dr. William H. Kelley, Professor of Medicine, Secretary of the Section on Medicine of the Southern Medical Association, was re-elected at the recent meeting to serve in the same capacity for the current year.

The information carried in our November issue that Dr. Morris Belkin, of the Yale University School of Medicine, had been appointed Instructor in Pharmacology in the College of Medicine, was in error. Dr. Robert P. Walton, of the University of Mississippi School of Medicine, has been appointed Professor of Pharmacology.

Because of the desire and interest of the Alumni Association, the Medical College presented a "Refresher Course" that took place on November 4th and 5th with an attendance numbering over 50 physicians, exclusive of the Charleston doctors and those connected with some branch of the army or navy located near the city.

The course coincided with Founders' Day.

Program

November 4th

Endocrine Aspects of Obstetrics and Gynecology, Dr. Robert B. Greenblatt, Augusta, Georgia.

Medical Subject—Nutritional Aspects, Dr. John B. Youmans, Nashville, Tennessee.

Repairs of Traumatic Injuries, Major George K. Lewis and Captain Alfred J. Suraci, U. S. A.

Medical Clinic, Dr. Heyward Gibbes, Columbia, S. C.

Round Table Discussion on Gynecology, Dr. Greenblatt.

Medical Round Table Discussion. Dr. Youmans.

Pathological Conference, Dr. K. M. Lynch, Charleston, S. C. Discussion by Drs. Lewis and Suraci.

Medicine in War—Public Meeting. Speakers from Army and Navy Medical Corps, Colonel W. W. Vaughan and Captain Edward H. H. Old.

November 5th

Syphilis, Dr. Udo J. Wile, University of Michigan, or Dr. A. V. Deibert, Hot Springs, Arkansas.

Pediatric Therapy, Dr. L. E. Holt, Baltimore, Maryland.

Medical Subject. Dr. Wm. B. Porter, Richmond, Virginia, Cardio-Diaphragmatic Syndrome (Angina).

Medical Subject, Dr. Reginald Fitz, Boston, Massachusetts.

Pediatric Round Table, Dr. Holt.

Medical Round Table, Dr. Fitz.

Pathological Conference, Dr. K. M. Lynch. Discussion by Dr. Howard Karsner, Drs. Fitz and Holt.

Founders' Day Banquet—Lecture by Dr. Howard Karsner, Professor of Pathology, Western Reserve University, on Aortic Stenosis.

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A bid for closer patient cooperation in adjustments of smoking hygiene

THE pace of modern life leaves its mark on many individuals. Symptoms, though remote, sub-clinical, may be of interest to the physician, perhaps in connection with nicotine intake.* Obviously, the exploration of this potential requires the patient's close cooperation.

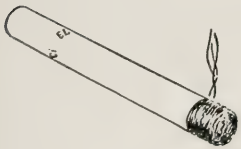
In this situation there is an advantage to you in advising slow-burning Camel cigarettes. Millions have changed to Camels for their superior mildness and flavor—the famous Camel "pleasure factor."

Patient's compliance with your suggestions should lead to improved accuracy in case histories. This may present new clinical opportunities, especially when such records are grouped and studied as a whole.

** J. A. M. A., 93:1110—October 12, 1929*
Brückner, H.—Die Biochemie des Tabaks, 1936
The Military Surgeon, Vol. 89, No. 1, p. 5, July, 1941

"THE CIGARETTE, THE SOLDIER, AND THE PHYSICIAN," The Military Surgeon, July, 1941. Reprint available. Write Camel Cigarettes, Medical Relations Division, 1 Pershing Square, New York City.





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COSTLIER TOBACCOS

BOOKS

PHYSICAL DIAGNOSIS: Thirteenth Edition, by F. Dennette Adams, M.D., Instructor in Medicine, Harvard Medical School, Courses for Graduates, Physician, Massachusetts General Hospital. *The Williams and Wilkins Company,* Mount Royal and Guilford Aves., Baltimore, 1942. $5.00.

This is the 13th edition of what was originally Cabot's Physical Diagnosis. Of its first edition Dr. Richard Cabot said that he was endeavoring to present an account of the diagnostic methods and processes needed by competent practitioners of that date, and that he made no attempt to describe processes with which the author had no personal familiarity, and that it gave no space to the description of tests which he believed to be useless.

The present edition, revised by Dr. Adams, adheres to the same policy.

It is of interest to North Carolinians that the writings and suggestions of Dr. Paul P. McCain and of Dr. Frederick R. Taylor are utilized.

There is a brief but adequate description of the making and reading of electrocardiograms.

There is no better book on Physical Diagnosis and it is the biggest medical book we have seen offered for $5 in many a long year.

MENTAL ILLNESS: A Guide for the Family, by Edith M. Stern, with the collaboration of Samuel W. Hamilton, M.D. *The Commonwealth Fund,* 41 East 57th St., New York. 1942. $1.00.

Perhaps never before has a book been written to so well cover so important a subject.

Contents

A Healthy Attitude Toward Mental Illness; When Mental Illness Strikes; Why Hospitalize?; Private or Public Hospital?; Getting the Patient Admitted; Taking the Patient to the Hospital; Leaving the Patient at the Hospital; The First Month in the Hospital; The Hospital World; Life in a Mental Hospital; Some Treatments for Mental Illness; The Family and the Hospital; Letters and Visits; Toward Discharge; When the Patient Comes Home; The Permanence of Recovery; Continued Care; There's More You Can Do. States Which Oversee Private Institutions for the Mentally Ill; Methods of Admission to Mental Hospitals in Various States; States Which Have Social Workers Connected With Mental Hospitals; States Which Have Made Legal Provision for Family Care; National and State Mental Hygiene Committees and Societies.

Each of the divisions as shown by the chapter-heads is covered in a way to be of most help to patients and relatives. Every family doctor should be familiar with its contents and so be in position to recommend the book to families of his patients who show mental symptoms.

AFTEREFFECTS OF BRAIN INJURIES IN WAR: Their Evaluation and Treatment. The Application of Psychologic Methods in the Clinic, by Kurt Goldstein, M.D., Clinical Professor of Neurology, Tufts Medical School. Foreword by D. Denney-Brown, M.D., Professor of Neurology, Harvard Medical School; head of Neurological Unit, Boston City Hospital. *Grune & Stratton,* 443 Fourth Ave., New York City. 1942. $4.00.

The author has brought to the task of writing this book a long experience in this field. His earliest studies were published in the German language and are available to no great number in this country. This present volume, making these studies available in the English language, will be welcomed by the profession in this country as an authoritative expression of this important subject.

Contents

Symptomatology

I. General Symptoms. II. Neurologic Symptoms (Lesions of the Motor Area, of the Sensory Area, of the Visual Area, of the Frontal Lobes, of the Cerebellum, of the Vestibular Apparatus). III. Mental Symptoms (Symptoms of the Early Stages; Psychogenic Symptoms; Persistent Mental Symptoms). IV. Origin of Symptoms. V. Psychologic Laboratory Examinations.

Treatment

VI. Physical and Neurologic Therapy (Treatment of Physical and Neurologic changes, of Circumscribed Mental Defects, of Disturbances in Word Finding, Structure of Speech; Retraining of Speech Defects). VII. Social Adjustment (Improvement of Working Capacity; the Choice of a Future Vocation; Evaluation of Usefulness for Military Service and Civilian Life; The Question of Compensation; The Problem of Social Care; Summary).

FIRST AID, SURGICAL AND MEDICAL, by Warren H. Cole, M.D., F.A.C.S., Professor and Head of the Department of Surgery, University of Illinois College of Medicine; and Charles B. Puestow, B.S., M.S., M.D., Ph.D., F.A.C.S., Associate Professor of Surgery, University of Illinois College of Medicine and Graduate School. Illustrations by Carl Linden in collaboration with Tom Jones of the Illustration Studios of the University of Illinois College of Medicine, Chicago. *D. Appleton-Century Company, Inc.,* New York and London, $3.00.

A good many of the medical schools of the country are teaching First Aid to medical students. This practice should be continued through peacetimes as well as war-times. A good deal of the subject matter is that formerly embraced in "minor surgery." Under a new name the objections of those who say there is no such thing as minor surgery will be obviated.

Wounds, burns, hemorrhage and shock are treated of in detail. Medical emergencies are not neglected. There is a valuable chapter on transportation of the injured.

(Continued on page 692)

OF INTEREST TO DOCTORS

DR. THOMAS A. SHALLOW of Philadelphia was inducted into the office of President of the United States Chapter of The International College of Surgeons at its Assembly in Denver recently. He is Samuel D. Gross Professor of Surgery, Jefferson Medical College, Philadelphia. He is a member of the College of Physicians of Philadelphia, a Fellow of the Philadelphia Academy of Surgery, a Fellow of the American College of Surgeons and of the International College of Surgeons, and a Founder Member of the American Board of Surgery.

His gastrostomy and operation of pharyngeal diverticulum, as well as his contributions to "Cyclopedia of Medicine" and numerous other contributions to surgical literature are well known.

DR. HENRY SMITH WILLIAMS of Los Angeles, California, now in his 80th year, has devoted more than 60 of those years to the etching art. He has more than 600 etchings to his credit. He has written two books, one on surgery, the other on etchings, and is now engaged in finishing his "Miracle of Surgery" in which a number of his etchings will be used to illustrate his work. These etchings are now on exhibition at the Physicians Art and Hobby Show at 49 East 34th St., New York City, sponsored by the "New York Physician" in coöperation with the Eimer and Amend Pharmacy. The etchings shown are Young Nathan Smith and Dr. Goodhue (1779), Ephraim McDowell: the First Ovariotomy (1809), Crawford W. Long: the First Operation Under Ether (1842), "Your Patient Is Ready, Sir!" (Morton and Ether), (1846), Marion Sims at Edinburgh, Showing Speculum (1861), Spencer Wells: Cauterizing the Pedicle (1863), Lister Demonstrates the Carbolic Spray (1877).

THE HADEN ETCHING CLUB held its first group showing since 1936 when many of its members exhibited their etchings and donated some of them for the benefit of the American Flying Services Foundation.

The Haden Etching Club was formed in February, 1931, by a group of dentists and physicians whose hobby is the etching art. The club derives its name from that illustrious English surgeon-etcher, Sir Francis Seymour Haden (1818-1910) whose brilliant contrasting achievements are adequate sources of inspiration to all medical men.

Members of the organization exhibit regularly in other art shows, amateur or professional, singly or as a group. Some of the men have reached a sufficiently high standard of excellence to be included in the roster of professional artists' societies, yet none of them claims to be anything more than a hobbyist. Obviously, it is only from the point of view of the amateur that one finds perfect satisfaction from any avocation.

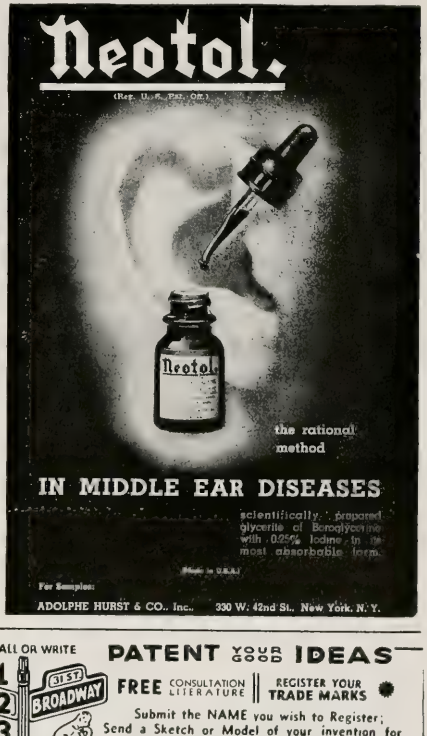
The present officers of the club include B. F. Morrow, M.D., president, Charles Berger, D.D.S., vice-president, B. W. Weinberger, D.D.S., secretary, Joseph F. Saphir, M.D., treasurer, and Harold S. Vaughan, M.D., D.D.S., chairman of the executive committee.

NEW TRUSTEES of the American Flying Services Foundation were recently elected to fill vacancies left by the men entering the armed services. They are: H. Llewelwyn Roberts, Past Commander Aviators Post No. 743, chairman, Henry R. Benjamin, Willis S. Fitch, Orion E. Hoskinson, Hon. Charles E. Ramsgate, Sidney Struble, Edward S. B. Walker.

The Foundation which, through its medical associates, is correcting physical defects found in American boys who apply for Flying Cadet training and who are rejected because of these defects. The Foundation is now doing work in forty States in the Union and that as a result of this work these American boys are being accepted into the services at the rate of 1000 men per year and it is just getting started. Its Medical Director is S. M. Strong, M.D. The Regional Medical Committee is composed of: chairman, Eugene R. Lewis, M.D. Its members are: T. E. Carmody, M.D., Denver; Richard A. Perritt, M.D., Chicago; O. Jason Dixon, M.D., Kansas City; John F. Fairbairn, M.D., Buffalo; John P. Chapman, M.D., Philadelphia.

A BOOK of exceptional interest to doctors has just been published by the Norman W. Henley Publishing Company of 17-19 West 45th street, New York City. The book is called "Henley's Twentieth Century Book of Ten Thousand Formulas, Processes and Trade Secrets." It has nothing to do with medicine but for the hobbyist, the

(*Continued on page 694*)





The whole book is made up of the most up-to-date information and those who accept and practice its teachings will run no risk of conviction in this day of malpractice suits.

FORMULARY AND HANDBOOK, The Johns Hopkins Hospital. *John D. Lucas Company,* Fayette and East Sts., Baltimore. 1942. $2.00.

This useful little book refutes the accusation that Johns Hopkins is a therapeutic nihilist. It shows rational confidence in a number of curative agents. The endorsement of Johns Hopkins establishes the character of the agents included.

Contents

General Information; Medicinal Agents, Diagnostic Agents, Central Nervous System; Autonomic Nervous System; Circulatory System; Hematopietic System; Respiratory System; Genitourinary System, Obstetrical Drugs, Gynecological Drugs, Urological Drugs; Skin; Eye, Ear, Nose and Throat; Gastrointestinal Tract; Metabolism; Vitamins; Chemotherapeutic Agents; Fever Therapy and Hyperpyrexia; Biological Products.

BLOOD SUBSTITUTES AND BLOOD TRANSFUSION, edited by STUART MUDD, M.A., M.D., Professor of Bacteriology, University of Pennsylvania School of Medicine, Philadelphia, and WILLIAM THALHIMER, M.D., Director, Human Serum Division, Public Health Research Institute of the City of New York, Inc. *Charles C. Thomas,* Springfield, Ill., and Baltimore. 1942. $5.00 postpaid.

This comprehensive symposium covers the whole of this extremely important subject in such a way as to leave no room for confusion as to indications, choice of agent, or method of administration.

Doctors in this section will be pleased to know that our own John Elliott's work on blood, plasma and serum therapy is recognized, and he contributes a chapter.

CLINICAL CARDIOLOGY: With Special Reference to Bedside Diagnosis, by WILLIAM DRESSLER, M.D., Attending Cardiologist, Israel Zion Hospital, Assistant Attending Physician, Brooklyn Hospital, New York. With 108 illustrations. *Paul B. Hoeber, Inc.,* Medical Book Department of Harper & Brothers, 49 East 33rd St., New York and London. 1942. $7.50, net.

The author would not have the clinician of today lose, through too much dependence on mechanical contrivances, the ability to make accurate diagnoses in most instances which was possessed by good doctors of former times. He has no foggy ideas about the desirability of making a "complete" diagnosis. When he has told his readers how to go as far into a case as will serve the best interests of the patient, he is content.

A book of unusual merit as a guide in many difficult cases, which does not confuse by multiple recommendations, or encourage unnecessary and expensive examinations in order to gratify the examiner's curiosity or his pseudoscientific pose of being "thorough."

THE EYE MANIFESTATIONS OF INTERNAL DISEASES, by L. S. TASSMAN, M.D., Associate Professor of Ophthalmology, Graduate School of Medicine, the University of Pennsylvania. With 201 illustrations, 19 in color. *The C. V. Mosby Company,* 3525 Pine Boulevard, St. Louis. 1942. $8.50.

Many doctors who have gone into practice in the past quarter-century use the ophthalmoscope almost routinely in the physical examination of their adult patients. It would be far better if this practice were universal. Sixty-five years ago a North Carolina doctor advocated this practice in a paper before the State Medical Society.

Contents

Normal Structure of the Eye and Orbit; General Causes of Eye Manifestations; Examination of the Patient; Structural Abnormalities and Manifestations; Examination of the Iris; Congenital and Hereditary Eye Manjfestations; Infections and Infectious Diseases; Tuberculosis; Virus Infections; Fungus Infections; Ocular Parasites; Focal Infections; Drug and Chemical Intoxications; Cardiovascular Diseases; Blood Diseases; Disorders of Menstruation and Pregnancy; Diseases of the Endocrine Glands and Metabolism; Avitaminoses and Diseases of Nutrition; Diseases of the Nervous System; Intracranial Tumors; Diseases of the Skin; Diseases of the Bones and Skull.

Since this book is available the doctor in general practice has no excuse for not bringing to his patients an immense quantity of valuable knowledge, by the application of which the patient will benefit greatly and the doctor's reputation be greatly enhanced.

Every general practitioner and every internist should have a copy, study it, and use the knowledge so gained daily.

MEDICAL PARASITOLOGY, by JAMES T. CULBERTSON, Assistant Professor of Bacteriology, College of Physicians and Surgeons, Columbia University. *Columbia University Press,* Morningside Heights, New York City. 1942. $4.25.

We are told that malaria, sleeping sickness and other diseases caused by parasitic animals have for many centuries infected a large majority of the world's population; and that now, for the first time, they threaten many Americans in the armed forces, whom the war has sent to the tropics and subtropics. Doubtless all this is true and that the medical profession in the United States should give more attention to animal parasites and the diseases they bring about.

This book describes the various parasitic animals which have health importance and points out the various manners by which they attack human beings. The best methods of diagnosing the infec-

tions are stated, and the means which man can take to prevent his infection with procedures effective for eliminating the parasites from persons already infected.

Medical students and practitioners will find this book an answer to their need for information on this neglected subject.

Contents:

Part I: General Considerations; Infection; Epidemiology; Natural Resistance and Acquired Immunity; Diagnosis; Specific Therapy; Prophylaxis.

Part II: Infections Caused by Animal Parasites; The Amoebiases; The Leishmaniases; The Trypanosomiases; The Intestinal Flagellate Infections; The Malarias; The Coccidioses; The Ciliate Infections; The Trematode Infections; The Cestode Infections; The Nematode Infections; The Acanthocephalan Infections; Hexapoda; Arthropoda of Medical Importance: Arachnida, Crustacea, and Myriapoda.

DIGESTIVE DISEASES IN GENERAL PRACTICE, by JOHN H. WILLARD, B.A., M.D., F.A.C.P., Associate in Gastroenterology, Graduate School of Medicine, University of Pennsylvania. Foreword by GEORGE M. PIERSOL, B.S., M.D., F.A.C.P., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania. One hundred and one illustrations, 14 in color. *F. A. Davis Co.*, 1914 Cherry St., Philadelphia. 1942. $5.50.

The author has taken cognizance of the fact that when a doctor is faced with a problem of disturbed digestion, with or without abdominal pain, it is important that he decide rightly whether the symptoms are due to involvement of the digestive tract or are manifestations of disease elsewhere. And he has written a book to help general practitioners solve this, and related, problems.

Wisely he says that in the therapy of digestive disorders a program is needed rather than single remedies.

Much water has gone under the bridges since the day when a gastroenterologist was a doctor with a stomach tube and a pitcher of water. More and more of gastroenterology has been retained by the family doctor and taken over by the surgeon. Cognizance of all this is taken by the author, and he writes a practical book which fairly estimates the functions of general practitioner and specialists in caring for patients who have gastrointestinal symptoms.

The doctor doing general practice who follows the teaching of this book will cure more of his patients of their peptic ulcers, have fewer of those with gastric carcinomas go on to inoperability and mistake less of his cases of coronary-artery disease for acute abdominal conditions and vice versa.

SURGICAL PATHOLOGY, by WILLIAM BOYD, M.D., LL.D., M.R.C.P.Ed., F.R.C.P. Lond., Dipl. Psych., F.R.S.C., Professor of Pathology, University of Toronto. Fifth Edition, Thoroughly Revised. 843 pages with 502 illustrations and 16 colored plates. *W. B. Saunders Company*, Philadelphia and London, 1942. Price $10.00.

The fifth edition is well worthy of the first, which presented the subject of surgical pathology adequately and in a rarely attractive form.

If the texts in general on pathology were as attractively written and written as this one is with practical usefulness to daily problems in mind, practitioners would keep much better informed on advances in our knowledge of pathology.

FUNDAMENTALS OF PSYCHIATRY, by EDWARD A. STRECKER, M.D., Sc.D., F.A.C.P., Professor of Psychiatry and Chairman of the Department, Undergraduate School of Medicine, University of Pennsylvania; Psychiatrist to the Pennsylvania Hospital; Attending Psychiatrist Psychopathic Division, Philadelphia General Hospital. Fifteen illustrations. *J. B. Lippincott Company*, Philadelphia. London. Montreal. 1942. $3.00.

Certainly every doctor in general practice and every specialist other than the psychiatrist needs a dependable book of reasonable length dealing with the fundamentals of psychiatry.



Dr. Strecker writes such a book of 200 pages. Certainly he would not have put it out as his work had he not known that it covered the subject adequately.

The reviewer endorses it and will use it.

CONSTITUTION AND DISEASE: Applied Constitutional Pathology, by JULIUS BAUER, M.D., Professor of Clinical Medicine, College of Medical Evangelists, Los Angeles, Calif., formerly Professor of Medicine, University of Vienna. *Grune & Stratton,* New York City. 1942. $3.50.

This book deals with the influence of individual constitution on clinical conditions. The author stresses the role of genetics in clinical practice, with special attention to endocrinologic disturbances. He shows how to observe intelligently and how to gather the observations into a rational diagnosis and how to proceed in the treatment of the patient as a whole.

Contents

Constitutional Pathology and Its General Significance; Constitutional Biological Inferiority of Organs and Tissues; The Integrative Systems of Individual Constitution; Classification of Normal and Abnormal Constitution; Some Major Disease With Chiefly Constitutional Etiology; Principles of Treatment, Non-specific Therapy, Pitfalls and Errors.

MILITARY MEDICAL MANUALS—Manual of Dermatology: Issued under the Auspices of the Committee on Medicine of the Division of Medical Sciences of the National Research Council by DONALD M. PILLSBURY, M.D.; MARION B. SULZBERGER, M.D.; CLARENCE S. LIVINGOOD, M.D. 421 pages with 109 illustrations. *W. B. Saunders Company,* Philadelphia and London. 1942. Price $2.00.

This is one of the handiest and most useful books on dermatology for the non-specialist that has ever been brought out. There is nothing redundant in it and that is why the subject can be covered in so small a book and yet have a good deal of the limited space taken up with illustrations.

Especially valuable is the dealing with principles of local treatment, urticaria and its congeners, drug eruptions and parasitic infestations.

Every man in general practice should have a copy.

OF INTEREST TO DOCTORS

(Continued from page 691)

delver in secrets, the doctor who wants to mix chemicals and compound ingredients it is a gold mine. He can find more new things about which he knows nothing in five minutes than what his painstaking years of research has brought him. The subjects discussed and formulas given cover perfumes, plating, photography, adhesives, cosmetics, ointments, soaps, veterinary formulas, essences and extracts and what not. The publishers say: "This book contains 10,000 selected household, workshop and scientific formulas, trade secrets, chemical recipes, processes and money saving ideas for both the amateur and professional worker.

THE THEATRICAL WORLD

METROPOLITAN OPERA ASSOCIATION

Edward Johnson, General Manager
Edward Ziegler, Assistant General Manager.
Earle R. Lewis, Assistant General Manager

FIFTY-EIGHTH SEASON OF GRAND OPERA

NEW REDUCED PRICES

As a publicly-supported institution the Metropolitan Opera Association is broadening its appeal so that its performances will continue to reach the widest possible audience. This year, by effecting financial economies in operation, but without reducing the size of the orchestra, ballet or chorus, and without sacrificing any of the high standards that have characterized Metropolitan Opera performances in previous years, it has been possible to reduce the price of subscription seats substantially, a move which will benefit our regular patrons and still attract a large new audience to the Metropolitan Opera. Orchestra subscriptions for sixteen performances are available at a $5.00 top (tax additional) per performance, with other subscription seats as low as $1.00 (plus tax). Seats for the Saturday evening popular-priced subscription series have been reduced to a range from $1.00 to $3.25 (plus tax) per performance.

NEW PRODUCTIONS AND REVIVALS

The aim of the management is to present during the course of a sixteen-week season operas which collectively represent a wide range. In line with this policy the Metropolitan this year plans to offer ten works absent from the repertory for one or more seasons, which will augment the standard works in such fashion that the goal of a well-rounded repertory will be achieved. All of these revivals have met with enthusiastic public response in previous performances and many of them will be presented this season with changes in cast and either in completely new dress and costumes or with scenery and costumes refurbished.

Of these revivals Donizetti's "Lucia di Lammermoor" will return to the repertory restudied and in an entirely original setting after an absence of one season. New scenery and costumes have been designed by Richard Rychtarik, who designed the highly successful production of "The Magic Flute" last season and the Gluck "Alceste" of the season before. The return of "Lucia di Lammermoor" in its new setting is expected to be one of the interesting features of the season.

At the same time much work and thought have gone into the preparation of the other revivals that are planned. Verdi's "La Forza del Destino," which will be included in the repertory for the first time since the 1934-35 season, will emerge freshly costumed and with sets completely refurbished. Similarly Bellini's "Norma," last heard in the season of 1937-38. The other revivals that are planned, most of them last heard in the 1940-41 season, are being prepared with extreme care both from an artistic as well as technical point of view—Debussy's "Pelleas et Melisande," Charpentier's "Louise," "Massenet's "Manon," the return of which to the list coincides with the 100th anniversary of the composer's birth; Pergolesi's "La Serva Padrona" (last presented in the season 1934-35); "Boris Godunoff," by Moussorgsky (last heard in the season of 1939-40); Strauss's "Salome" (season 1938-39), and Wagner's immortal "Tristan und Isolde."

SUNDAY NIGHT CONCERTS

The Metropolitan will offer a series of Sunday evening concerts devoted to solo scenes and acts from the operatic repertory, in which the artists, orchestra, chorus and ballet of the Metropolitan Opera Association will participate. Many of these are scheduled for charitable organizations.

CHUCKLES

A patient with troublesome hemorrhoids had difficulty in explaining his symptoms since he was only recently from India. I prescribed rectal suppositories for him and carefully explained to him how they were to be used.

A few days later he returned complaining, "Medicine no good; bad taste, please, different medicine."

A patient presented a very efficient secretary with a bottle of amber-colored fluid and it was placed in the laboratory. As it was boiling in the test tube a heavenly fragrance filled the room. This fact was called to the attention of secretary who then questioned Mrs. X. The sweet old lady told how dismayed she had been that her gift of a bottle of perfume had not been acknowledged.

A beautiful blonde walked into the office. She complained of constipation and a great weight in the rectum, sure she had a cancer. Upon examination, a mass of fecal matter. To hospital, mass removed.

All beds on the women's floor being occupied she was placed in a room on the obstetrical floor. In this hospital there resided a priest, 84, whose habit it was to visit each patient after breakfast, greeting one and all with encouraging words.

To the new patient: "Good morning, Madam. You must have arrived in the night. You certainly are looking fine. Is it a boy or a girl? From the look of you I know it's fine, whatever it is."

A new girl at the telephone exchange.

Shortly after I received a call from the hospital that Mrs. X was admitted and was about to precipitate. I rushed to the hospital.

When I got back to the office I called the girl. She told me: "I asked her if it was the first or second child and Mrs. X told me it was the second and that she was having pains every five minutes. So I told her to stay home until her pains came every ten minutes."

Colored boy nine years old, in the ward, because of unilateral blindness and because of a tower skull.

When returned to the ward he said: "The man, he took my picture, and then he goes out of the room. He comes back later, and looks at the picture near the light. It's not my picture. It's a skeleton picture."

A big negro applied for the treatment of an acute gc. infection. A solution of protargol and instructed to inject three times a day. He returned on the next clinic day. Asked how he felt he answered, "I feel fine, doctor, I want some more of this here brown drinking medicine."

Called to attend the wife of a bartender, profuse uterine hemorrhage. Four children and the husband kneeling around the bed. The wife addressed her husband in a feeble voice: "When I am dead, marry my sister; she is a steady girl and will take good care of the children."

After a uterus tamponade and a blood transfusion. The woman clasped my hand, a coy smile brightened her pale face and she said: "Doc if I were 20 years of age and owned a million, you would have to marry me now." She was 45, owned no million, and I did not have to marry her.

W.A.A.C. (just reported for duty: "Where do I eat?"
Adjutant: "Why, you will mess with the men."
W.A.A.C.: "Yes, but where do I eat?"

"What is it that a dog does and a man steps into?"
"Easy-Pants."

"Hello! Is this 192?"
"Yes, this is the Doctors' Exchange."
"Well, I want to change doctors. I'm not satisfied with the once I've got."

Blessed are the sparrows for in addition to having divine observation while they fall, they are now the only creatures able to make deposits on new cars!

Four days after Franklin Roosevelt entered the White House in 1933, the late Mr. Justice Holmes celebrated his 92nd birthday. On that hectic day, with the banks closing and the shadows of the AAA and NRA hovering close, Roosevelt still found time to call on him. "You're the wisest man in America," he said. "What advice have you for a man who has become President of the United States during this crisis?"

"Young man," Holmes replied, "you are in a war. Fight like hell."

For a long time Cape Town's aldermen wondered how best South Africans could be reminded that the war was on.

At last they hit on an idea. Out of oblivion they brought the town citadel's old cannon, gave orders that at noon each day the historic weapon should be fired.

Ever since, at the sound of the gun's blast, the city's traffic lights have turned red, vehicles have stopped and pedestrians have halted. For two minutes every day the people of Cape Town thus stand still while loudspeakers volley the buglenotes of the Last Post.

The Remembrance Silence over, policemen blow their whistles, traffic and pedestrians move on. Shrewd observers say that people's reactions to the war can be guessed from behavior during those two minutes.

"Sound" citizens—i.e., those who back Prime Minister Jan Christiaan Smuts—stand rigidly to attention; Isolationists and potential Fifth Columnists are grumpy, restless, and secretly sneak puffs from their cigarettes.

A newly-inducted private wrote his family some few days after he had arrived at camp:

"I've gained sixty pounds since I came here—two pounds of flesh and 58 pounds of equipment."

A comedian came on the stage in Berlin weeping and ejaculating.

"We are deprived of this and of that, no butter, no coffee, no soap, and all on account of that hound."

During the shocked silence that followed in rushed the Gestapo and hustled him off to the nearest police station. The comedian protested violently and said the police had made a mistake.

"Of course," he said, "I had Churchill in mind, but who were you thinking of?"

Wife: "The new couple next door seem very devoted. He kisses her every time they meet. Why don't you do that?"

Doctor: "Sounds attractive. How big is the husband?"

"That lawyer of mine is the worst yet."
"Why so?"
"Listen to this item in his bill: 'For waking up in the night and thinking over your case—$5.00.'"

The doctor was studying the menu as the waitress approached to take his order.

"Have you frogs' legs?"

"No, and it wouldn't be anything to you anyhow."

Straphanger: "See here, who are you pushing?"
Second Ditto: "I dunno. What's yer name?"

VITAMIN B_1 IN HEART DISEASE

(O. J. Morehead in *Northwest Med.*, 41:65, 1942)

A woman, 30, had fever, p. 125 per min., edema of lower extremities, and mild delirium. An initial dose of 40 mg. thiamine hydrochloride, intravenously, was followed after 10 hours by 20-mg. doses of the vitamin given every six hours. After a period, dosage was reduced to 10 mg. once a day.

One hour after the first dose of thiamine, p. had decreased to 100 per min., t. had fallen 2°, generalized edema so reduced that the skin was visibly wrinkled. Progressed to complete recovery.

A 7½-year-old girl with nervousness, nausea, vomiting, moderate fever, and abdominal pain; r. 30; t. 101.5. F. Examination showed precordial pulsation and cardiac enlargement.

The patient was given an initial dose of 10 mg. thiamine intravenously. Improvement was noted within an hour by a fall in p., t. and r. rates. Medication repeated the following day and no further parenteral therapy was required; patient put on a high vitamin diet with vitamin B complex by mouth. Within a week child had returned to school and has been well since.

Attention is called to the resemblance of the clinical picture in these patients to that of early acute rheumatic fever. The author says some patients of this type might well be treated with vitamin B_1.

IMMUNIZATION AGAINST RESPIRATORY INFECTIONS

(K. N. Victor in *Ky. Med. Jl.*, 40:43, 1942)

This investigation is based on observation of several hundred patients over a four-year period. The author advises subcutaneous injections at three-day interavls of Parke-Davis catarrhal vaccine respiratory (combined), 0.25 to 1 c.c., followed by 1 c.c. monthly.

This procedure offers the greatest chance of eliminating or minimizing of upper respiratory infections and complications.



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